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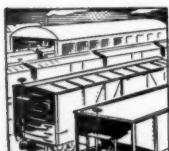
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Business Men and Economic Problems

Two years ago apparently an overwhelming majority of the business men attending the annual meeting of the Chamber of Commerce of the United States were favorable to most of the New Deal measures being considered in Congress, and especially to the National Industrial Recovery bill. A year ago most of those attending the Chamber's annual meeting apparently were still in favor of most parts of the New Deal, although many had become very doubtful or openly hostile to them. This year resolutions were adopted, with the support of an overwhelming majority, that energetically express opposition to most of the New Deal policies.

Why this reversal of business sentiment? It has occurred mainly because actual experience during the last two years has taught business men much about economic problems and the way government almost inevitably deals with them. Why did not business men know more about them before? How much do they really know about economics now? Are they going to learn more in future, and, if so, what use are they going to make of the knowledge?

Struggle is Essentially Political

These are questions of vital importance. We are in the midst of the greatest struggle regarding government policies affecting the production and distribution of wealth and income that has ever occurred in the history of the world. While the issues involved are economic, the struggle is essentially political. If the outcome is to be favorable to the maximum practicable production and prosperity, bad government policies must be made bad politics by the creation of a public sentiment against them and those who favor them, regardless of their party affiliations.

Bad economic policies are any that restrict total production. They include policies, whether of government or business, that hinder such distribution of what is produced as is necessary to create maximum effective demand for all that can be produced. How are we to learn to distinguish between sound and unsound policies? Only by thoroughly studying economic facts, and logically reasoning from them to conclusions re-

garding the policies that will cause maximum production and thereby provide a maximum national income.

Business Men and Economics

Why did so many business men favor unsound policies two years ago, and even a year ago? Because they had not really studied economics, and were influenced mainly by what they believed would be to the temporary advantage of their own business. We hear many business men ridicule professional economists, and even assert that no two economists agree about anything. This is far from true. Ridicule of the "brain trusters" who recently have acquired notoriety often is justifiable, but very few of them ever were, or are now, regarded by real economists as economists. It may surprise many business men to learn that since 1933 two or three national organizations of economists have sent questionnaires to their members regarding important new government economic policies, and that in almost every instance the answers made have shown an approximate unanimity of opinion among those making them very similar to the consensus of opinion which business men are now approaching because of hard and disillusioning experience.

It is doubtless true that most economists lack the qualities that would enable them to run a business successfully. Undoubtedly it is equally true, however, that most business men don't know anywhere near as much about broad economic problems and their correct solution as most economists. But how are business men to become effective leaders in the struggle between private enterprise and socialism unless they do acquire a knowledge of economics? The proneness of many of them to assume that any policy is sound or unsound according to the way in which they believe it will temporarily affect their own business leads them into every kind of inconsistency.

The Vital Durable Goods Problem

The situation imperatively demands more study of economic problems by most business men and more

effort by business and its spokesmen to educate the public regarding them. It is significant that H. G. Wells, the well known British writer, who is socialistic in his tendencies, emphasizes in a recent article in Collier's the weak and timid way in which the case against socialistic policies usually has been presented within recent years in the United States. The economic fiction used by most socialistic writers to attack capitalism can be made more interesting than the economic facts that must be used to defend it; but the facts must be ascertained and widely disseminated if recovery under capitalism is to be accomplished.

The best essay regarding the present problems of recovery that we have read is that entitled, "The Chief Cause of This and Other Depressions," which has been written by Col. Leonard P. Ayres of the Cleveland Trust Company for a Senate Committee. We publish elsewhere in this issue an extended abstract of the second half of this essay, in which Col. Ayres statistically demonstrates certain facts of the most vital importance, and his demonstration of which conclusively supports views that repeatedly have been expressed in the *Railway Age*. He shows that decline of production and employment in the durable goods industries principally caused this and other depressions, and that revival of production and employment in them is the only available means of recovery. He shows that, excepting automobiles, five-sixths of all buying from the durable goods industries is done, not by individuals, but by railroads and other business concerns. He shows finally that "at the bottoms of depressions it is the business enterprises that start the flow of increased purchasing that initiates recovery," that "they do it when changed relationships between costs and prices bring improved prospects for profits," and that the reason why the recovery measures thus far adopted during this depression have not worked is "that they have not been accompanied by any general improvement in the prospects for business profits," but by the reverse.

Those who wish to contribute toward recovery and, especially, business men, cannot do so better than by carefully studying Col. Ayres' essay and disseminating the data and arguments that it presents. The railroads are among the largest buyers of durable goods. His discussion is, therefore, the strongest possible argument for policies that will enable the railways to improve their net earnings and credit, and thereby increase their buying.

Government in Business

The Mississippi Valley Committee, which was appointed by President Roosevelt, consisted of eminent engineers in both private and public life. Morris L. Cooke, Philadelphia, was its chairman, and it included Major General Edward S. Markham, Chief of Engineers of the United States Army, and Lt. Col. Glen E. Edgerton of the Corps of Engineers. It made its report last winter to the Administrator of Public Works, Secretary Ickes. Regarding the upper Mississippi waterway system it said, "It is not possible by any

calculation to discover any economic justification for the vast expenditures on the projected improvements of these waterways." It also said, "The main stem of the Missouri river is being improved for navigation in the face of great obstacles and at an expense which has very doubtful justification." As to the lower Mississippi, it concluded that the total government subsidy provided shippers is about 9 mills per ton-mile on the basis of rail haulage, and it recommended detailed study to determine whether or not savings by inland water transportation would warrant payment by shippers of a charge for the use of waterways.

A short-cut method for proceeding with controversial and expensive inland waterway projects without specific Congressional authorization and appropriations has been afforded by the \$4,000,000,000 work relief legislation. The Advisory Committee on Allotments for the public works program has recommended the allotment of over \$100,000,000 for river and harbor projects, including some of those that have been most vigorously opposed in hearings before Congressional committees and army engineers. These recommended allotments include \$25,000,000 for the upper Mississippi river, \$12,000,000 for the Missouri river, \$15,000,000 for the Ft. Peck reservoir to regulate the flow of the Missouri river, \$5,000,000 for the Chesapeake & Delaware canal, \$5,000,000 for the Beaver & Mahoning river project in Ohio and \$5,000,000 for the Great Lakes to Hudson river waterway.

"The government should retire from *all activities that compete with private industry*," says one of the resolutions adopted by the Chamber of Commerce of the United States. Did all who voted for it mean that they were opposed to the government using the taxpayers' money to improve and maintain inland waterways in competition with the railways? Did they mean that the government should not build and maintain highways for commercial use in competition with the railways without charging rentals for such use sufficient fully to reimburse the taxpayers for the expenditure of their money made in providing highways for commercial use?

The resolution regarding transportation virtually advocates comparable interstate regulation of all carriers. This is fair and constructive. But many business men are still so inconsistent in their attitude toward transportation and other industries that they would oppose every effort to stop the economically unjustifiable expenditures upon waterways and commercial highways that are still going on and being proposed, and to require the payment of adequate tolls or rentals for the use of existing waterways and highways. When such business men say "the government should retire from all activities that compete with private industry," they simply mean it should not compete with their industries.

Situation Demands Business Consistency

The situation imperatively demands, however, that business men shall become consistent in opposing and

advocating for all industries the same general government policies. They can make no real headway against unsound government policies in general if they continue to advocate them in particular.

Some industries are naturally monopolistic, some naturally competitive. Those that seem naturally monopolistic may become highly competitive, as is now true of the transportation industry. Those that are naturally competitive may become virtually monopolistic, as had occurred in many cases before NRA codes were adopted, and as has become even more true under many NRA codes. No reasoning, made illogical by shortsighted selfishness, can prevent those who reason logically from reaching the conclusion that similar conditions in different industries demand similar treatment of these different industries; that we must choose between government competition with all industries or with no industries; that we must choose between competition and monopoly in every large industry, and that government policies regarding each industry should be determined largely by whether government or its own management makes that industry competitive or monopolistic. Transportation is now treated as regards the railroads as if monopolistic and not in need of government subsidies, and as regards other carriers as if competitive and in need of government subsidies. Business men who regard tolerantly, or even favor, such unfairness and inconsistency in government policy regarding transportation are in no position to criticise unfairness in dealing with other industries.

Convenience a Vital Service Asset

The principal advantages that have enabled highway carriers to take traffic from the railways are greater convenience and lower rates. To balance this, the railways had, at the beginning of the competition, greater experience in transportation, and greater safety and dependability. These have proved to be insufficient to prevent loss of business to highway competitors.

Convenience is an especially prominent factor with respect to the automobile, which affords a traveler means of going where he wants to go when he wants to go. He is not doing this as cheaply as he imagines, but cost also is often a factor in the use of private automobiles in preference to rail transportation. The truck, taking the farmer's live stock directly from his farm, and other freight from the door of the consignor to the door of the consignee, also offers convenience at low cost.

Increased speed and lower rates are helping to regain passenger business, but the complete solution of the railway passenger problem depends upon the use of some kind of equipment that will combine frequency of

service with speed and economy. Likewise, in order fully to meet the competition of the truck, it will be necessary for the railways and manufacturers to develop service and equipment that will, with economies, match the door-to-door service of the trucks.

Experiments are now being made with various kinds of equipment and service toward solving these problems. The final solution of the passenger problem, especially on branch lines, may be found in self-propelled, single-unit vehicles that will operate on both highways and rails, or by various forms of co-ordination between rails and highways.

The solution of the problem presented by the convenience of truck service may be found in rail-truck-rail service provided by vehicles operated on both highways and rails, or in demountable bodies used on both motor trucks and freight cars, or in the use of trucks at both ends of the rail haul for storedoor collection and delivery.

Much effort is being devoted to increasing speeds and lightening equipment. Is enough attention being given by railway managements and manufacturers to the vital problem of increasing the convenience of both passenger and freight service? The railways can beat any of their competitors, excepting the aviation companies, in making speeds. In many territories and between many communities, however, speed is comparatively unimportant. This is especially true of territories and communities served principally or wholly by branch lines; and it is in these places that relatively the largest losses of both passengers and freight business have been suffered.

The collection and delivery service that has become almost nation-wide in the past few years has proved a vital factor in attracting merchandise traffic back to the rails. But this convenience to the shipper is not being utilized to its fullest advantage. It is operating successfully on individual roads and, in some cases, on groups of roads, but it is invariably restricted to limits wherein truck competition is keenest. But, with the constant expansion of truck competition, who can say what these limits are, or if they will be the same tomorrow as today? Forward-looking traffic officers are already attempting to sell the idea of universal pick-up and delivery service, on all roads and between all roads in the country. These traffic officers are meeting with scant encouragement at the moment, but probably they are right. This service is a formidable weapon in combating highway competition, and there is no reason why the difficulties of installing it universally should not be ironed out to permit using it to the fullest possible extent.

The railroads cannot do everything at once, especially when poor earnings and lack of credit make improvements in facilities and service so difficult. But, apparently, most of them could profitably, with the co-operation of manufacturers, be giving more study and effort to means of increasing the convenience of service.

What About the Steam Locomotive?*

A proved high-speed machine of wide flexibility and possessing greater availability than that for which it has been given credit

By Robert S. Binkerd

Vice-President and Director of Sales, Baldwin Locomotive Works

It was only about 30 years ago that the railroads in the United States were just about to be completely electrified. Yet today, as we approach the completion of the greatest single electrification in the history of American railroads, I do not think I am giving away any secret when I say that the expectations of our big electrical companies with regard to future railroad electrification are not very sanguine. Certainly I give out no secret when I say that from a plain dollars-and-cents point of view the steam locomotive today is a more serious competitor of electrification than it was 30 years ago.

Today we are having quite a ballyhoo about streamlined, light-weight trains and Diesel locomotives and it is no wonder if the public feels that the steam locomotive is about to lay down and play dead. Yet over the years certain simple fundamental principles continue to operate. Some time in the future, when all this is reviewed, we will not find our railroads any more Dieselized than they are electrified, and in each case a substantial portion of those operations will not be based upon what will produce the highest return on the investment, but on aesthetic considerations or compulsion of public bodies.

A couple of months ago I was out in Kansas City. When I got through my day's work I had a few hours left and I bethought myself that here the Burlington Zephyr and the first Union Pacific aluminum train were both operated and so I thought I would go down and look into the matter. I was particularly interested because I had just previously made a study of a steam versus Dieselized operation of another locomotive run and had been surprised to learn that there was no terminal expense connected with one of these light-weight Dieselized trains. But when I got down to the Kansas City terminal I found that in order to turn these trains around they had to route them on an irregular ellipse over three miles in the Kansas City yards, but in order to hold the expense of that down as far as possible they did not put a yard crew on the train as required by the rules. Of course, that is one way of holding down terminal expense, but obviously it has not much to do with the Diesel motor in the front, or the streamlining of the train, or the weight of the cars. And then I was very much interested in looking at the schedule because, naturally, in common with most other members of the public, I had an idea that this first Zephyr was splitting the ozone out there in the west. Imagine my surprise to learn its scheduled speed for the 251-mile run was only 45.6 miles an hour.†

Fast Schedules Not New to Steam

When I got back to my hotel I found a telegram asking me to be in Portland, Maine, at the earliest possible moment. So I hurried back to St. Louis and had just

half an hour to catch the poor old Southwestern Limited of the New York Central. It was hauled by a dumb steam locomotive that one day takes ten cars, another day twelve cars, another day thirteen cars, and provides through service from St. Louis to Boston, New York, Washington and Cincinnati. This poor train did not know anything better than to make a schedule of 51.7 miles an hour, and I did not notice any caption reading: "This train is limited in its equipment and passengers can be accommodated only to the extent of its seating capacity."

Nevertheless, not only as a locomotive builder, but also as a railroad investor and one who has served the railroads to the best of his ability in times gone by, I feel that the railroad and equipment industries both will owe a debt of gratitude to developers of Diesel power and light-weight trains, not because these are going to supersede steam and standard equipment, but because they are stimulating constructive thought and effort. At the same time there are dangers in the conveying of false impressions to the public mind and at the present time a false impression is certainly being created with regard to the improvement of passenger schedules. The truth is that this new twentieth-century development of Dieselized light-weight trains has not yet touched nineteenth-century performance with steam, and hardly more than parallels the daily performance of many modern steam trains of today.

An Atlantic type compound locomotive built by Baldwin in 1896, during the months of July and August, 1897, hauled the Atlantic City Express of the Reading 55½ miles from Camden to Atlantic City in anywhere from 48 to 46½ min., or at a schedule speed from start to stop of from 69.3 to 71.6 m.p.h. After it got outside of Camden and before it got to the corporate limits of Atlantic City it averaged from 82 to 85 m.p.h., and at various times it was caught—probably against the existing speed limits—running 111 to 112 m.p.h. Of course, that was before the day of the all-steel passenger coach.

Then, we come down to modern steam with interchangeable standard passenger coaches, but substantially reduced in weight, and we find the Chicago-Milwaukee, St. Paul & Pacific about to install a 6½-hr. service from Chicago to St. Paul which will parallel the schedule of these new Burlington Zephyrs which went into operation on April 21. The Milwaukee has 410 miles to St. Paul, and this train will average 63 m.p.h.

Then, coming to trains which carry interchangeable all-steel Pullman and passenger coaches of standard weight, you will note that the present schedule of the "400" train on the Chicago & North Western is 58.8 m.p.h.;‡ the schedules of the Twentieth Century Limited is 56½ m.p.h. to Chicago; the schedule of the Columbian on the Baltimore & Ohio for the 223.6 miles to Washington, D. C., from New York is 55.9 m.p.h.; the new schedule of the Wall Street Special on the Reading since

* Abstract of a paper read before the meeting of the New York Railroad Club, April 25, 1935.

† This includes 25 minutes dead time at Omaha.—EDITOR.

‡ Since Mr. Binkerd read his paper this schedule has been stepped up to 62.9 m.p.h.

April 29 is 55 m.p.h. The Empire State Express runs 435.9 miles from New York to Buffalo, N. Y., at 52.8 m.p.h. The St. Louisian on the Pennsylvania runs 1,051.7 miles, New York to St. Louis, Mo., at 50.1 m.p.h. The Atlantic Coast Line runs the Miamian from New York to Miami, Fla., 1,388 miles, at 49.7 m.p.h., and the New York, New Haven & Hartford runs the Yankee Clipper, New York to Boston, Mass., 229 miles, at 48.2 m.p.h.

The Pennsylvania, on April 28, put in a schedule on the Congressional Limited, a modern electric service, of 57 m.p.h. over the 225.2 miles, New York to Washington, D. C.

The foregoing are made by trains carrying interchangeable all-steel Pullman and passenger coaches; performing through service from many different points; having terminal delays which are a part of furnishing this service, and still most of them make better time than any of these new Diesel streamlined, light-weight trains, except the Twin Zephyrs. These latter go 431 miles from Chicago to St. Paul, making a schedule of 66.3 m.p.h. But the Union Pacific streamlined train out of Kansas City, Mo., to Salina, Kan., makes only 53.4 m.p.h.

The speeds that are being made with these Diesel streamlined trains are not because of any fundamental characteristics of the Diesel engine, but in spite of them. A fundamental characteristic is a rapid loss of drawbar pull at speed, so that at 70 or 80 m.p.h. a Diesel locomotive can hardly exert one-tenth of its starting power. The only way in which this characteristic of the Diesel engine can be overcome is by trimming the weight to be hauled down to a negligible relationship to the motive power. But the price of this trimming down is the creation of rigidly limited trains incapable of expansion or variation and absolutely non-interchangeable with any other form of passenger equipment.

Why Recent Schedules Have Not Been Fast

Most of the fleets of passenger locomotives in this country—largely Pacifics—were supposed to be adequate for 10-car trains when the average weight per car was 65 or 70 tons. Today, the average weight of these cars is around 85 tons and these locomotives are given eleven, twelve, thirteen or fourteen of these 85-ton cars. So, instead of having 700 tons in deadweight back of the tender, these locomotives have 1,000, 1,100, or 1,200 tons. When you consider that the acceleration of a train depends on the ratio between the tractive force of the locomotive and the dead weight to be moved back of the tender, you will realize why it takes longer to get these trains up to speed; why the top speed has been materially reduced, and why, in short, steam passenger speeds, such as those of the Reading in 1897, have disappeared.

The passenger schedules of the future are going to revolve around some control of average or maximum dead weight back of the tender. As new passenger-train cars are built there will be substantial reductions in dead weight without losing any of the standards of safety which have been established out of past experience, and these cars will be completely interchangeable with existing equipment. As a result the dead weight of a train can be made up of a number of combinations of new and old cars and the capacity of any train can be increased without increasing the dead weight by the simple expedient of increasing the proportion of new and lighter cars in the total train load.

This is the evolutionary method by which every other great improvement in railroad service has been brought about. Scarcely ever have the railroads taken a wild

leap in the dark. Always they have taken a step forward and gradually that forward step has become a standard. With each passing year most new equipment purchased has embodied that standard and the railroads have gradually achieved an ever-growing percentage of savings that can be effected over a reasonable term of years without the loss of existing capital investment. If this policy is to be followed—and in my judgment it is the only safe one—you will see that it is essential that the locomotive should be kept separate from the train, because only by keeping the locomotive separate from the train can you be free to make up the train load out of an infinite number of combinations of new and old cars. With air conditioning moving forward by leaps and bounds the drawbacks of smoke and cinders are removed from the steam locomotive and the last objection to the use of steam in passenger service is destroyed.

Characteristics of Steam and Diesel-Electric Locomotives

The dotted lines in Fig. 1 give the drawbar pull of a Diesel-electric locomotive and of the Northern Pacific 4-8-4 type steam locomotive on an 0.5 per cent grade. Even here where the Diesel locomotive has the advantage of the constant horsepower of the electric transmission you will note that the drawbar pull of the steam locomotive crosses the Diesel at about 18 m.p.h. and above that speed the steam locomotive has about 3,000 lb. more drawbar pull than the Diesel.

Here you see the tractive force and the drawbar-pull curves of a better Diesel locomotive than has yet been built. We designed it, but nobody yet has come forward to pay the four hundred or five hundred thousand dollars which it would cost to build. This Diesel locomotive has the advantage of two 1,975-hp. engines that weigh only about 13½ lb. per horsepower. It has the advantage of special and expensive electrical and mechanical equipment designed to overcome, as far as possible, that characteristic loss at speed of power delivered at the rim of the wheel. But notwithstanding all these things, at 80 m.p.h. this Diesel locomotive has hardly 15 per cent of its original tractive force left.

When, on the other hand, we turn to the tractive-force curve of the Northern Pacific 4-8-4 type which we built last year, you will note that it has a tractive force at starting of only 70,000 lb. But at 80 m.p.h. it

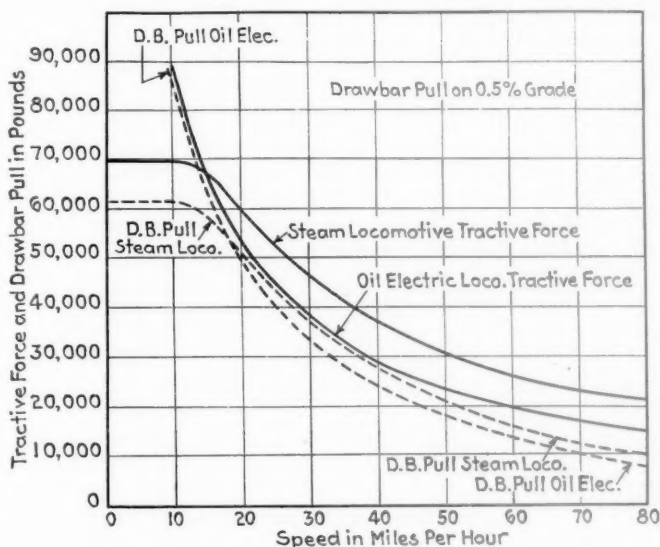


Fig. 1—Comparison of the Tractive Force and Drawbar Pull on a 0.5 Per Cent Grade of a 4-8-4 Type Steam Locomotive and a Diesel-Electric Locomotive

still has 22,000 lb. tractive force left, or nearly one-third of its original tractive force, and in all the working speeds from 30 m.p.h. up it has a constant excess of approximately 8,000 lb. of tractive force. This steam locomotive, which gives a better tractive-force curve at all working road speeds, would be reasonably priced at one-third or less of what it would cost to build the Diesel locomotive with which it is compared.

The one place in which the Diesel locomotive has a substantial advantage is in its tractive force at low speed. That is the reason why Diesel power so far has been mainly applied to switching. But the lower the speed at which the Diesel locomotive is worked the greater is its advantage. There are many places where such locomotives can show a distinct economy notwithstanding the fact that even Diesel switching locomotives, with none of the expensive elements of the Diesel locomotive referred to in Fig. 1, cost approximately twice as much as comparable steam locomotives. But in drilling over the hump of a classification yard; in switching into and out of electrified areas; in protecting the service

doubt that there is an inexorably rising cost of repairs with the advancing age of any prime mover. With regard to steam this is so definite that we have cost curves from which we can predict within a fraction of a cent the probable cost of repairs per mile of a locomotive of any given horsepower, of any given age, with any given intensity of service.

With regard to Diesel locomotives, of course, the data are meagre as compared with that for steam. The data which are available, however, have been published every year, as an appendix to the report of the A.R.A. Committee on Locomotive Construction. The report of May 23, 1932, covers a hundred odd locomotives from one to seven years old. I have had this reduced to a comparable basis showing the cost of repairs per hour for a 100-ton locomotive and you can read it forward and backward for a locomotive of any size by simply taking the proportion that it bears to 100 tons; that is to say, a 60-ton locomotive per hour would be 0.6 the cost shown at the given year of age.

The Maintenance Comparison

Curve B, Fig. 2, is derived from our study of 1,913 steam switchers operated by 26 public-service railroads in this country—locomotives all the way from one to 41 years of age. Curve A is merely a placing on the same basis of the Diesel locomotive maintenance costs reported by the A. R. A. Committee on Locomotive Construction. Each of them is the cost of maintenance per hour of a 100-ton locomotive. You notice that a new steam locomotive and a new Diesel locomotive start off at about the same point; a new Diesel slightly lower. But by the time the Diesel is seven years old its costs of maintenance is nearly double that of a seven-year-old steam locomotive and, if you projected curve A out to 17 or 19 years, the indicated cost would be far more than double that of steam.

I am not claiming that the maintenance cost of Diesel locomotives will be a constant repetition of curve A. It is easy to believe that in this relatively small experience of Diesel locomotives there has been a lot that will not be reproduced in future years. But I also wish to point out with special clearness that no one can predict with any certainty as to what the maintenance cost of a Diesel locomotive may be over a life of 20 or 25 years. There is not one scintilla of evidence to justify the claim that a Diesel locomotive of equal weight on drivers can be maintained at a cost as low as that of a steam locomotive of the same age after the first year or so. Everything points to the probability of a substantially higher maintenance cost for Diesel locomotives than for equivalent steam locomotives. The only thing nobody knows is how much higher.

It is easy to see how this impression has been brought about, however, and I wish to make it plain that I do not believe this misrepresentation is intentional. The manufacturers, eager to sell this new type of locomotive, made studies of existing operations. On many of these operations they found obsolete steam locomotives 25 to 30—and I have seen some 40—years old. Some of these manufacturers were not aware of the fact that maintenance costs rise rapidly with age. All that they saw was that in the first year of the operation of a new Diesel locomotive they could make a substantial saving over the sums that had been spent in maintaining obsolete steam locomotives. And so they claimed for the Diesel locomotive a saving in operating cost which arose, not out of the Diesel itself, but out of the substitution of a new for an old locomotive. And so I suggest to you that whenever you set out to study the economy of installing Diesels the greatest safeguard that you can have

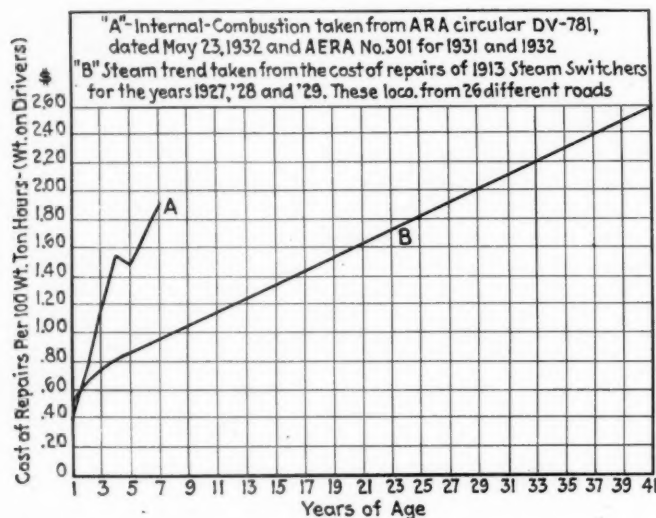


Fig. 2—Cost of Repairs per 100 Tons Weight per Hour of Internal-Combustion and Steam Switching Locomotives

at outlying points, permitting the doing away with roundhouse facilities, and in other exceptional places, particularly where one locomotive can be made to do the work of two or three different types, a real return can be found.

Fuel in Relation to Fixed Charges

At the moment, with Diesel oil at five cents a gallon, the higher thermal efficiency of the Diesel locomotive affords a distinct economy in fuel, particularly for use in intermittent service. On the other hand, fuel costs are not as important as some other costs; and fuel economies are far less certain than savings in interest, amortization, taxes and repairs. Why? Because when one looks to the future it is reasonable to assume that with our enormous supplies the price of coal will remain relatively low for generations to come. But the sources of flush production of our oil could dry up in a relatively few years and an increase in the demand for the various crude-oil products might double or treble the price of them within a generation.

But the greatest source of disappointment will undoubtedly come from the cost of repairs. At Eddystone in the last four years we have analyzed the repair costs of tens of thousands of locomotives in every form of service. We have proved beyond peradventure of a

is to first set up what modern properly designed steam power will do in that operation. If then the Diesel still indicates substantial savings and those savings would pay a higher return upon the larger investment in the Diesel, then you have probably got a case for Diesel application.

It is claimed that the Diesel locomotive may be kept available for service 80 or 85 per cent of the working time of the year. This fact is used to reduce the cost per hour by spreading the constant costs over as many hours of work as possible. This is entirely legitimate, and the Diesel locomotive, in the main, has shown a high availability for service. But the chief drawback to a much more intensified use of steam is frequently in the minds of the men who use them and not in the locomotives. I have seen a number of steam switchers in this country that are making 7,200, 7,500, and even 7,700 hours of service a year. With a certain amount of time lost for ashes, fuel, water, etc., a modern steam switcher can make 24 hours a day, six days a week, just as well as a Diesel locomotive.

The Automatic Oil-Fired Steam Locomotive

Another and real advantage of the Diesel locomotive has been its mechanical availability for one-man operation. Where such an operation is safe and permitted by law and working arrangements, it has meant a real economy. But we have just proved at Eddystone that this economy can be matched in steam power. The first automatic oil-fired steam locomotive is a small saddle-tank locomotive which we built for our own Standard Steel Works at Burnham. Without discussing certain features on which we contemplate patent application, the fundamental idea is perfectly simple. The fire of this locomotive is regulated by the steam pressure. It never pops because when the steam pressure reaches a few pounds blow the blow-off point, the fire automatically reduces. We can set the points at which the fire reduces and again increases within a substantial working range. The fire has three positions: low, intermediate and high, but we can make it four or five if necessary. No steam and no fuel is wasted. At the low flame this burns about four gallons of Bunker C oil per hour, costing less than 15 cents. The engineer does not have to think about keeping up steam at all. All he has to do is to run the locomotive. Our records indicate so far in this locomotive we have used only about 35 per cent of the B.t.u. we used doing the same work in our old coal-fired switchers. We have even put roller bearings on this locomotive partly as a contribution to lubrication and partly to avoid time out for driving boxes. In other words, we have tried to produce a little steam switcher, the wheels of which never have to be dropped except for flange wear. Our idea is that the fuel supply should be sufficient for 26 hours' operation and the water supply for at least an eight-hour trick. And, of course, where saddle tanks would not be sufficient for oil and water, recourse would be had to a tender, and, if you agree with us, we might put the tender in front of the locomotive instead of behind it.

Fig. 3 shows the tractive-force curve of this little switcher compared with a 300-hp., a 480-hp., and a 600-hp. Diesel locomotive. You will note that it crosses the 480-hp. Diesel locomotive at about 5 m.p.h. and at 10 m.p.h. it can do about 15 per cent more work. We are laying this out in other locomotive sizes up to 51,000 lb. tractive force.

What Is the Best Investment in Locomotives?

How may we judge the best investment in a locomotive? Is it by the largest indicated gross savings? I

think not. I have in front of me a report on a certain terminal operation indicating that a fleet of automatic oil-fired switchers would save, in a period of 20 years, about \$4,400,000. A fleet of Diesels in the same operation would indicate a saving of about \$5,200,000 during the same period. But the investment required to achieve \$4,400,000 worth of savings is only about half that to achieve the indicated \$5,200,000 worth of savings. For every dollar invested in automatic oil-fired steam locomotives the return on the investment would be approximately 25 per cent, whereas the larger gross savings on the larger investment in the Diesels would return only about 14.5 per cent on their cost. Bearing in mind the uncertainty with regard to Diesel fuel and maintenance costs in the future, which is the better investment?

The ten years, from 1924 or so down to date, have registered probably a greater improvement than in any other decade of the hundred years of life of the steam

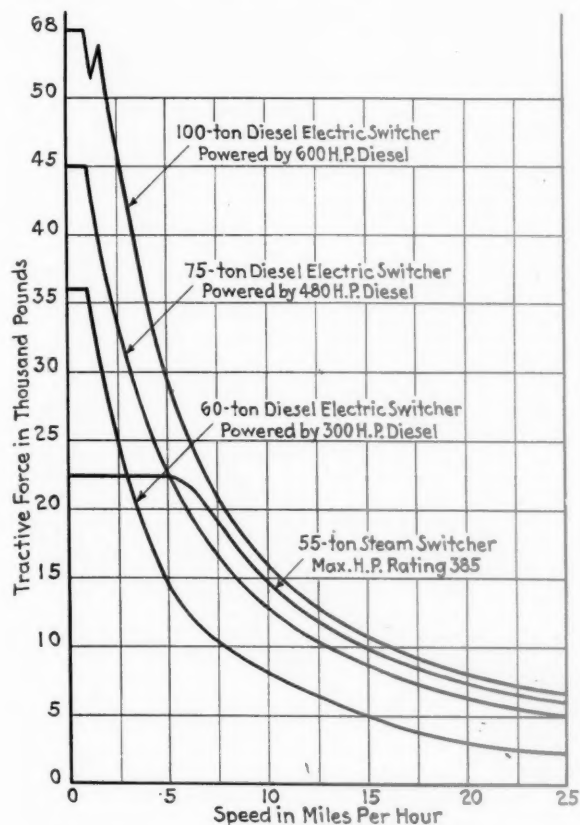


Fig. 3—Comparison of Tractive Force Curves for a Small Steam Switching Locomotive and Three Sizes of Diesel-Electrics

locomotive. The misfortune is that this goes on in a quiet way; there is nothing dramatic about it. It just goes on. But it was not until 1920 or so that we got average steam pressures around 200 lb., and it was not before 1925 that we began to get them at 225 or 250 lb. and on up. We had superheats ten or twelve years ago of only 150 deg. Today we have 300 deg. We had steam temperatures ten or twelve years ago of 390 deg. Today we have steam temperatures of 700 deg. In general this improvement has been such that any modern road locomotive built today can do, at speed, approximately double the work of its brother or sister of ten or fifteen years ago.

If anybody wants to look around to find out where the railroads can make the most money, he doesn't have to look around at all. All he has to do is just start out to supplant with modern steam power the oldest part of the existing steam inventory which is being used day by

day, and that investment will vastly improve service, pay its interest, amortize the investment within the economic life of the power, and produce a substantial increase in net operating income.

Discussion

In opening the discussion the president, C. E. Smith (vice-president, New York, New Haven & Hartford) told of the question which arose when the New Haven was electrifying its New York division as to how many suburban multiple unit cars would be needed to handle the commuter traffic at New York. The engineers, he said, found out the number of commuters, figured on how many seats could be got in a car, and how many cars in a train, and thus calculated the amount of equipment needed. A dispute arose between the operating department and the electrical department because the traffic was not available uniformly during the 24 hours and, no matter what kind of equipment was used, it had to lie idle when the passengers did not travel, a feature sometimes overlooked in considering availability.

J. B. Ennis (vice-president, American Locomotive Company) called attention to the fact that the steam locomotive is a very flexible machine, the maximum capacity of which (speaking of specific designs), in spite of a century of background, cannot be accurately predicted. The possibilities for an increased rate of firing, of reserve boiler capacity, of the individual skill of the engineman in operation, all contribute to handling extra cars, meeting bad-weather conditions, connecting-train delays, etc., which call for more than the nominal capacity of the locomotive which, in the case of the straight-electric or the Diesel-electric locomotive, is the actual maximum capacity. Mr. Ennis referred to the locomotives just completed for the Chicago, Milwaukee, St. Paul & Pacific by the American Locomotive Company and said that they constitute the first instance when a railroad has asked the builder to design and construct a strictly up-to-date special locomotive smaller than the standard passenger power of the railroad for main-line service to handle a medium weight train. In times past he pointed out that the lighter main-line power has always been delegated to such duties. Other countries, he said, have been designing and building strictly modern units for light duty, both on main and branch lines.

Referring to the Diesel-electric locomotive, Mr. Ennis called attention to the fact that considerable changes have taken place in the characteristics of the Diesel engine for locomotive service during the past ten years. Air injection has practically disappeared, engine speeds have increased, the weights have been reduced, piston speeds have gone up and combustion conditions have improved, and the art is still rapidly changing. In speaking of switching service, he said that the maintenance costs in the experience of the American Locomotive Company have been low with modern Diesel-electric locomotives. Some of these locomotives, he pointed out, have given 8,000 hours of yearly service which does not leave much time to be devoted to maintenance. In making Diesel surveys, he said that the American Locomotive Company never figures on a life of over 15 years and some studies have shown that the investment would pay for itself in five years, a fact which lessens the importance of the question of maintenance of the Diesel engine. In comparing the Diesel locomotive for switching service with a steam locomotive for mainline service, Mr. Ennis pointed out that the investment is very much lower for the switcher, that weight in the latter is necessary for adhesion, and extremely light-weight engines not even desirable. In the case of the road locomotive, however, lighter engine weights are necessary, higher

speeds are desirable, and that minimum space is an important factor. Various forms of alternates for the electric transmission are being considered and the chassis must go through many stages of development along with the engine. In view of these conditions and the rapidly changing art, Mr. Ennis said, it is likely that some of the Diesel-electric road locomotives now proposed will be obsolete before they are placed in service, and under present conditions the abnormally high first cost makes it unlikely, even in the face of the fuel savings, that there is an economic place for this unit in road service. In conclusion he said that the Diesel locomotive had gone far enough in this country to indicate that it cannot be lightly dismissed; that we must continue to investigate it and make certain of these possibilities, but that this must be done in a conservative, orderly fashion, basing actions on known facts rather than on "hope-so" theories.

George W. Alcock (Lima Locomotive Works) called attention to a traffic aspect of the locomotive situation which he considered of importance to the railroads, as well as to national defense. The serious railroad problem today, he said, is the loss of traffic which the railroads have sustained as the result of competition from other transportation agencies. Following the internal-combustion locomotive development to its logical conclusion with the complete displacement of steam locomotives, which some newspapers have said is going to happen, he pointed out the effect that this would have on the production of coal, which now constitutes approximately 20 per cent of railway car loadings. From the standpoint of national defense Mr. Alcock suggested the probability that the next war will be fought entirely with motorized equipment which will probably lead to the commandeering of fuel oils, of which the supply is fairly limited. In the face of this situation he said it is unthinkable that we could ever dispense with the steam locomotive.

Philip Stohlberger (master mechanic, Reading) related some of his experiences in running locomotives in the Camden-Atlantic City service on the Reading 35 years ago. He explained how the service, then one hour from Philadelphia to Atlantic City, called for a 10-min. ferry-boat schedule, which was frequently overrun because of wind and tide, requiring the locomotive to make the 55½ miles between Camden and Atlantic City in from 44 to 46 min. He pictured the year-to-year increase in the number of cars which had to be handled on this schedule, starting with three coaches weighing 93,000 lb. each and a Pullman and gradually building up until, with the first superheated steam passenger locomotive on the Reading—a three-cylinder engine—schedules were maintained with 14 cars. He told how on one occasion, on a 31½-mile part of the line where the Pennsylvania and Reading tracks were parallel, his disinclination to allow the Pennsylvania train (farther down the track than usual on his approach) to beat him, led him to "just widen out on engine 344 a bit" so that he passed from Elwood to Egg Harbor, a distance of five miles, in just 2½ min. with a nine-car train. This time was authenticated by his division superintendent (C. H. Ewing, now president of the Reading) who happened to be sitting by the dispatcher—a fact which led to a few embarrassing moments after the end of the run.

JOHN L. SIMPSON, vice-president of the J. Henry Schroder Banking Corporation, New York, has been elected chairman of the International Railways of Central America to succeed the late Prentiss N. Gray. Mr. Simpson has been a director of the line.

What of the Crosstie?

Problems of production, seasoning and grading studied at meeting of Railway Tie Association

SHOULD a railway adapt its tie requirements, as to sizes, to woods-run production? Can ties be seasoned safely in field concentration yards? How can checking be prevented or controlled? Are changes in railway practices affecting the demand for crossties? These questions are indicative of the problems discussed by 100 tie producers and railway officers interested in the use of crossties at the seventeenth annual meeting of the Railway Tie Association at St. Louis, Mo., on May 15-16.

The meeting was presided over by E. J. Stocking, president of the association and vice-president of the Hobbs-Western Company, St. Louis, who reviewed the negotiations during the year with the lumber code authorities over the tie producers code and stated that most of the tie producing areas have discontinued code collections. Mr. Stocking deprecated the growing practice of trucking ties to market or to other lower-rate shipping points and a resolution supporting this position was adopted by the association at its closing session. Citing the increase in tie purchases last year, and stating that this volume has been maintained so far this year, Mr. Stocking expressed the belief that this increase would continue, although the distribution of relief money has tended to reduce production and increase costs.

In a discussion of the possible work which the association might undertake, D. C. Jones, vice-president, Ayer & Lord division, Wood Preserving Corporation, Chicago, urged the continuation and elaboration of the statistical data on crosstie inventories which the association is now compiling and suggested its extension to include railway crosstie inventories. He also suggested the collection and dissemination of information with respect to numerous problems confronting the industry, including the effect of production of oversize ties on cost, the training of men for inspectors, the maintenance of grade in competitive buying, the standardization of field storage methods, etc. Mr. Jones suggested a program of publicity to keep before the railways the superiority of the wooden crosstie as a means of track support. He also urged that the association study the trend of railway specifications for crossties in order to prevent their becoming unduly restrictive, believing that some of the action taken recently by the A.R.E.A. tends in this direction. In conclusion, he directed attention to the diverse interpretations of specifications, although stating that some progress has been made in harmonizing practices of late.

At the concluding session of the convention, the following officers were elected: President, H. R. Condon, vice-president, Century Wood Preserving Company, Philadelphia, Pa.; first vice-president, T. J. Turley, general superintendent, Bond Brothers, Louisville, Ky.; second vice-president, E. A. Morse, vice-president, Potosi Tie & Lumber Company, St. Louis, Mo.; directors, R. Van Metre, president, Wyoming Tie & Timber Company, Chicago; L. Perez, National Lumber & Creosoting Company, St. Louis, Mo.; H. G. McElhinney, Kettle



River Company, St. Louis, Mo.; and E. J. Stocking, vice-president, Hobbs-Western Company, St. Louis, Mo.

Abstracts of papers presented at the meeting follow:

Anti-Splitting Irons — Where and When to Apply Them

By R. E. Beegle*

A split tie is an ineffective tie. Such service records as have been published show that split ties bulk large in number, especially since preservative treatment has largely eliminated decay as a factor in tie service.

Ties generally split along the radial lines and at right angles to the greatest width of opposite sapwood areas. The simplest form of split is the V-shape which extends from the top and from the bottom to and/or through the pith of the round "pole" tie. This form of tie, with sapwood on both sides, splits in practically every case if not protected. It should, therefore, be ironed promptly. Ties with less sapwood or with sapwood located elsewhere than on the sides may not split so soon or so surely; but experience seems to support those who believe that every end should be ironed as soon as practicable.

While it is common knowledge that ties split freely during the breezy spring months, nobody can forecast a rainless summer with hot winds which dry ties and continue the period of active splitting. Where low temperatures freeze the moisture in ties, splitting resulting from ironing makes it impracticable to apply anti-splitting devices until the ties have thawed out. Likewise green ties with high moisture content split if ironed when at their maximum wetness.

In summarizing a study of splitting, the A.R.E.A. Committee on Ties concluded that "irons should be so placed as to cross the greatest possible number of the radial lines of the wood." This provides for a binding or a pinning element across these lines of cleavage, at an effective angle. It is self-evident that the nearer right angles are approached, the better. It is in aiming to carry out this principle of placement that drivers of irons are called upon for ingenuity and intelligence. Irons cannot be driven under a fixed formula. Almost every tie is a special

* General Manager, Beegle Tie Service Company, E. St. Louis, Ill.

problem. The more adaptable an iron is, the better it can be placed.

The near-right-angle crossing of radial lines is the primary, but not the sole consideration in the placing of anti-splitting irons. When a split already exists, the size of the segments influences the placing of the iron. Its ends should enter the segments which are to be prevented from separating farther, in a manner which will not split them, and to an extent which will hold them securely. To prevent slippage, suitable anchorage at the ends is required. To prevent splitting from spiking, the body portion of any iron should be as nearly as possible parallel with the top of the tie and extend past the spike spacing. The farther irons are kept from the surface of ties, the less likelihood there is of splits being developed by their insertion. The ends of irons should not come within an inch of the split that their placement is supposed to control.

Since radial lines are to be crossed, not followed, it follows that irons driven through the pith are misplaced. In ties where the pith is midway between the top and bottom, the ban against passing an iron through the pith points to the necessity for an iron near the top and another near the bottom of the tie. There is a growing appreciation of the impossibility of a single iron arresting every possible variety of split which may develop in the end of a tie.

In brief, don't delay the ironing, don't iron wet ties, don't iron frozen ties, don't postpone ironing until splits appear, don't insert any iron vertically, don't insert any iron through pith, don't anchor any irons in a split, don't insert the body portion of any iron within an inch of a surface and don't insert the body portion of any iron within two inches of the pith when connecting three sections of a tie.

Discussion

In discussing this paper, E. E. Pershall (T. J. Moss Tie Company) suggested that drawings be prepared showing typical forms of checks and the proper location of irons to control this checking, for the use of field forces applying irons. John Foley (Penna.) attributed the difficulty of securing intelligent driving of irons in ties to the lack of importance attached to this operation by executive officers, as evidenced by the type of labor employed for this work. He also stated that the installation of anti-splitting devices can be carried to the point where their use becomes uneconomical.

Concentration Yards

By C. H. Hobbs†

No standard method can be adopted for yarding ties on concentrating yards in the field. However, there are certain practices that should be adopted by everyone, such as the stacking of ties on sound blocks cut from cull ties, the draining of the yards, and keeping the yards free from vegetation and decaying ties and timbers.

We do not advocate seasoning ties in the field, because of the limited yard space that is usually available, the inadequate drainage, the presence of vegetation, the excessive damage to ties on account of checking when they are stacked in cribs on sawn strips or treating plant style immediately after manufacture, and be-

† Vice-President, Hobbs-Western Company, St. Louis, Mo.

cause it is practically impossible to give ties yarded at several points in the field the attention that can be given them when concentrated at one point. By attention, I mean the driving of S-irons when needed, treatment at the proper time and the cleaning up of the odds and ends of industrial grade ties that are bound to be accumulated.

As a large part of our production is purchased from individual makers, it is necessary that we keep yard buyers on our concentrating yards at all times and as ties are unloaded from trucks or wagons, they are graded by these yard buyers and stacked as follows: Rejects and size 1 together, sizes 2 and 3 together, and sizes 4 and 5 together. This grading and separation are not done haphazardly. By strict and constant supervision, our buyers come to know that they will be checked on the grade of ties we find in each stack.

All ties, whether in cribs or ricks, are stacked on 12-in. to 24-in. blocks cut from ring-out ties. The lengths of blocks used depends on the condition of the yard, whether soft, cindered or otherwise. The stacking of ties on blocks, instead of on cull ties, provides better air circulation under the stacks, enabling the ties on the bottom of the stacks to season out. This practice also does not hinder drainage and permits a yard to dry out more quickly after rains. All pine, gum and sawn oak ties are cribbed, 7-in. by 9-in. ties being cribbed 9 and 9, and 6-in. by 8-in. ties being cribbed 10 and 10, the outside ties in each layer being placed on edge and all hearts turned to the inside, or down, in the stacks. When ties are stacked in this manner, they season to some extent but not so quickly as to cause excessive checking. The length of time that ties stacked in this manner can be held on concentrating yards depends on weather conditions and on how well the yard is drained.

We think that all hewn oak ties should be ricked for three to six months, depending, of course, on weather conditions. In ricking ties, care should be taken to place one tie on top of the other, keeping the ends even on one side of the rick so that if ties are of the proper length, the other side will take care of itself. When oak ties are ricked, they season very slowly, thereby reducing checking to the minimum. After being left in ricks for three to six months, these ties should be moved to the treating plants and stacked treating-plant style. By yarding ties in this manner we believe that checking will be reduced to the minimum and more uniform seasoning obtained.

Before ricking ties, a solid crib is built at the extreme back of the yard, where the yard slopes away from the track, or as close to the track as possible where the yard slopes to the track or is reasonably level. A line is then stretched parallel to the loading tracks and stakes are driven 8 ft. or 8 ft. 6 in. apart, with alleys 3 or 4 ft. wide. This provides a perfect line for the front or back of the yard, as the case may be. Ties are ricked against the cribs, the purpose of the cribs being to hold the ties and keep them from rolling, particularly onto the loading track; also, more ties can be stacked in a rick when placed in this manner, as cribs can be built as high as desired. All cribs and ricks should be built the same height. Care should be taken to leave three or four feet of space between ricks and cribs to allow as much circulation of air as possible.

Binding poles and cull ties, particularly ties showing rot, should not be left or accumulated on tie yards. Also, yards should be kept as free from vegetation as possible and ditches should be cut and ties yarded in such a manner as to secure as much drainage as possible.

Trends in Railway Practices as They Affect Tie Life

By Elmer T. Howson

Vice-President and Western Editor, Railway Age

The producer of railway crossties has only one outlet for his product—the railways. However, the railways normally spend more for his product than for any other material which they buy with the single exception of fuel. For these reasons, he has a very vital interest in every trend in railway practices which affects crosstie life and use.

Twenty years ago, railway requirements for crossties approximated 120,000,000 annually. In 1933 their purchases totaled only 30,000,000 ties, while last year they approximated 52,500,000.

How much of this reduction has been due to the enforced curtailment of purchases resulting from the depression? Obviously it has been brought about in very real part by this condition, for the railways have curtailed expenditures in every possible way. One must not overlook the fact, however, that crosstie requirements were declining before the depression broke, purchases in the boom years of 1928 and 1929 being 10,000,000 ties less per year than a decade previous. Since railway purchases as a whole reached high levels in these years, the decline in

the purchase of cross-ties cannot be attributed to a lack of funds. The explanation for the decline must be found elsewhere.

The first and most important influence contributing to this condition is the rapidly growing practice of treating ties, which doubles and trebles the life of timber and reduces renewals correspondingly. Second only to treatment in its contribution to increased tie life is the raising of the standards for cross-ties. Never before have the railways so generally secured ties produced to such high standards and protected so carefully against decay through seasoning as during the last decade. The result here has also been to extend tie life materially.

Furthermore, after the tie goes into the possession of the railway, it is being protected more carefully than ever before. Ties are no longer drawn into place with picks—they are no longer adzed frequently and deeply. They have come to be recognized as valuable property and are treated as such. Thus, they are being adzed before treatment to provide a uniform bearing for the tie plates. They are being bored for rail-holding spikes. They are also being equipped with tie plates of more liberal dimensions, all of which measures tend to reduce the mechanical destruction of the timber.

A Change in National Development

But these are not all of the influences that are tending to affect tie requirements. One of the major influences on the demand for your product is the change in the trend of our national development in recent years—a change that has come on us so gradually that the full effects are not yet realized. From the time when the Baltimore & Ohio first struck out for the west in 1832, until about 1916, railway development in this country was primarily extensive—the construction of new lines to reach areas without facilities or in need of additional facilities. As much as 6,000 miles of new lines have been built in a single year, while during the nine years from 1899 to 1907, inclusive, an average of more than 5,000 miles was built annually. During the same period, railway traffic was doubling about every 10 years, requiring large mileages of additional main and yard tracks.

Beginning about 1910, this condition began to change. There were no more areas to be tapped, no more Pacific Coast extensions to be built. As a result, the mileage of new lines completed declined steadily until even in the boom years of 1927-8-9, it averaged only 625 miles per year, or scarcely more than 10 per cent of that of a quarter century before.

Similarly, the rate of increase of traffic declined for some years prior to the collapse of 1929, making necessary less new mileage of additional tracks. Simultaneously, a number of measures were developed, designed to increase the capacity of existing tracks, notably centralized dispatching and the remote control of switches. As a result, the construction of new tracks, which had required as many as 30,000,000 ties a year around the beginning of this century, came to a standstill.

More recently, this development has taken another form—the abandonment of existing lines. While lines have been taken up here and there for years as the need for which they were built has disappeared, the mileage involved was small. Of late years, however, the mileages of lines abandoned has increased so rapidly as to reveal a definite trend. Year by year this mileage has increased until in 1933 the total reached 1,876 miles and in 1934 mounted to a new high of 1,995 miles. In these same years the mileage of new lines completed aggregated 24 and 76, respectively. Since 1917, a total of 15,706 miles of lines have been abandoned, while 10,148 miles have been built, a net decrease for the period of 5,558 miles. These figures demonstrate that, so far as mileage is concerned, the railways have not only ceased to extend their lines, but have passed into a period of definite contraction of mileage. Furthermore, the abandonment of this mileage is releasing a very considerable number of usable ties which are being salvaged and re-inserted in renewals, reducing the demand for new ties to this extent.

A New Era in Train Speeds

Within the last year another development has appeared which bids fair to become of far reaching importance to the railways. I refer to the initiation of high speed train operation. Starting with the spectacular Denver-Chicago run of the Burlington and the Los Angeles-Chicago-New York run of the Union Pacific, both of which broke long-standing records, passenger trains of

standard as well as of new streamlined designs are now in regular operation at speeds materially higher than heretofore scheduled anywhere in the world. Neither is the speeding up of trains confined to these spectacular runs, for it is evidenced in the tightening of schedules throughout the country. Nor is it confined to passenger train service, for freight trains are now operated as a matter of daily routine at speeds higher than were considered desirable for passenger trains only a few years ago.

Such schedules require stronger track—one that will withstand the greater thrust of these fast-moving trains. They also require a track that will maintain greater refinement of line and surface. Since the tie is the very foundation of good track, it is evident that it is being subjected to requirements that will become steadily more exacting as these speeds become more universal. This condition is giving impetus to the use of larger ties, equipped with tie plates of sufficient area to distribute the load over the timber without destruction of the fiber. It is also leading to the practice of fastening these plates rigidly to the ties with lag screws or cut spikes to make them a unit with the tie and eliminate chafing or wear of the wood under the plate, a form of deterioration which has tended to reduce tie life.

One of the lessons which the railways have learned from the depression is that the disturbance of track should be reduced to the minimum. It is only on this ground that one can account for the present excellent riding condition of much track after five years of continuous undermaintenance. The beneficial effect on the ties of this apparent neglect has been marked, for the continued disturbance of track is highly destructive to cross-ties. There are many who believe that we are approaching the time when track will be given a major overhauling at relatively long intervals and the replacing of individual units will be reduced to the minimum in the interval. To the extent that this lessens the destruction of ties, it may be expected to extend their life and reduce the requirements for renewals.

By reason of the large number of ties renewed annually, even on the reduced allowances of recent years, it is essential that they be renewed with the maximum economy. This has led of late to studies of the organization best adapted to this work. Out of these studies are coming modifications of the time-honored practice of making these renewals with the section gangs. On at least two roads, this task has been turned over to extra gangs who make the renewals in the same manner as the section forces have previously done, these gangs being so organized and equipped as to do this work with the minimum cost. Another road which has also turned this work over to special gangs, works over a given stretch of track at intervals of three years, making heavier renewals at the time and then leaving the track undisturbed in the meantime. With specialized gangs of this character, it is to be expected that the ties will be examined more critically before being renewed, which will reduce premature renewals and add somewhat to the average life of ties.

Still another indication of the steps that are being taken to extend the life of ties is the precaution that has been adopted by one road of assigning an inspector to each rail-relaying gang, whose duty it is to see that all unnecessary destruction of ties incident to rail-renewal operations is eliminated. In such work, where every effort of a large gang is directed towards production, as measured by the amount of rail relaid per day, it is not surprising that the destruction of ties may be hastened by hurried and excessive adzing, by careless plugging of spike holes, by unnecessary spiking around turnouts, etc. It is the function of this inspector to curb such practices and to promote care in all operations affecting ties. On this road, which has long pioneered in the use of treated ties, it is also the practice to provide rail-renewal gangs with hot creosote which is applied to all freshly-adzed surfaces before tie plates are applied, a measure designed to retard decay of those exposed surfaces and thereby contribute to increased life.

In all of these various practices, it can be seen that we are moving rapidly into an age of refinement in the handling of cross-ties in which one precaution after another is being introduced to reduce destruction and extend tie life. Obviously as the life of a tie is increased from 8 or 10 years to 20, 25 or 30 years, the loss occasioned by some neglectful or objectionable practice becomes increasingly serious. It is for this reason that the railways are steadily becoming more exacting in their attitude towards decay, character of manufacture, seasoning, etc.

We are truly in an age of progress in which our older rule of thumb practices are giving way to those of greater refine-

ment, each contributing to the ability of the railways to provide that service which will merit and retain the patronage of the public and enable the railways in turn to continue to provide a large and stable market for your crossties.

In what has preceded, I have considered only those trends of long duration. There is also a situation of the immediate future. Owing to the drastic decline in earnings, the railways have curtailed all expenditures, including those for crossties. This policy

has now been in effect for five years, with the result that there is now an accumulated deficiency in renewals exceeding 100 million ties. In other words, there are now in track more than 100 million ties that would, under more normal conditions, have been removed. This is equivalent to about 1½ years normal renewals under present conditions. This is a deficiency that must be made good eventually and that time cannot be postponed too long without danger.

Meeting Woods Production in Tie Sizes

Should a railway accept the various sizes of ties in the proportions in which they come from the woods? Or should it purchase ties in the sizes best adapted to its individual needs, leaving to the producer the problem of merchandising the remaining ties as best he can? These questions direct attention to a problem which has long been a topic for discussion between those who produce railway crossties and those who use them. It also reflects a difference in attitude between those railways which traverse tie-producing areas and those remote from such areas. The two attitudes were set forth in papers which are presented below.

The Railway View Point

By H. R. Duncan*

Just as there is no uniform run-of-woods production common to all tie-producing areas, there is no uniform railway characteristic. Some roads have a large proportion of light traffic branch lines while others have only moderate traffic on even their more important main lines. Again, some roads are in such financial condition that they can buy materials which will result in the greatest ultimate economy while others must buy as cheaply as they can today, regardless of ultimate economy.

The present practice of tie distribution on most roads is the result of study and experience by those railroad officers responsible for the construction, maintenance and operation of their tracks. They have given consideration to sources of supply of timber suitable for ties, to the location of treating plants, to financial conditions, to the prices of various species and sizes of ties, to the weight of their motive power and equipment, to the speed and density of traffic and to the design of their track structure, which latter includes the weight of rail, size of tie plate, kind of ballast and spacing of ties. Often a change in the standard for one unit of the track structure may necessitate changes in other details. The tie is an important part of the track structure, but it is still only a part and other units in the track must also be given consideration. We cannot expect to design the track around the tie but must incorporate the tie in the design of the track. The problem of the proper use and selection of ties is one of engineering design just as directly as is the problem of selecting the weights of rail or the kinds of ballast for different lines.

I understand woods production to include all of the ties that are produced, regardless of the proportions of each size that are produced. This infers that if a producer is able to sell all of the ties he produces, regardless of size, this will enhance his profit and/or result in a cheaper tie for the railroads which buy his output and will also result in a somewhat better utilization of our forests. However, no tie producer has ever offered us any reduction in the price of ties if we would adjust our percentages of grades to accord with woods production.

When considering woods production, it is essential that we know the percentage of ties of each size. Does this percentage vary in different localities? Does it vary with different species of wood? These questions are important to roads like the Burlington, which has many different classes of lines and which has found it economical to secure ties from the Pacific Coast, the Rocky Mountains, the Big Horn Mountains, the Black Hills, the

right-of-way, and south of the Ohio river. We have never heard much about woods run or woods production from producers on the Pacific Coast. Apparently it is a problem of the South.

The Effect on Maintenance Costs

If these questions were answered satisfactorily and we were able to readjust our tie distribution to conform to woods production, we would, of course, have to give consideration to the increase in the cost of our track structure as a whole. For example, our railway buys a smaller proportion of No. 5 hardwood ties in comparison with No. 4's than is usually termed woods production. If we were to increase the proportion of No. 5's, the first effect would be to increase the cost of ties used in our No. 4 territory, for the reason that we have always paid more for a No. 5 tie than we have for a No. 4 tie.

It might be possible to realize the full benefit from larger ties if we were constructing new tracks or if we were renewing ties out of face but, under present conditions when no new track is being constructed and ties are generally spotted in, it will require the same number of No. 5 ties to maintain a mile of railroad as when No. 4 ties are used. Another objection is that it will be necessary to disturb more ballast when putting No. 5 ties in track. While if we should adopt a policy of gradually changing over from No. 4 to No. 5 ties, we might ultimately be able to respace the ties so that we could use fewer ties per mile, it would probably be 8 or 10 years before full benefit could be realized from the larger ties.

Looking at the problem from a broader standpoint, it is pertinent to ask whether any of our major systems should be expected to take all the ties that can be produced by one concern. Some properties need practically all large ties, while there are other roads in which almost any kind of ties can be used. Would it be possible for your association to develop a plan whereby ties would be produced in the sizes required, for all of the railroads, rather than for individual railroads? If this will not enable you to dispose of all of the logs which you cut, should you not endeavor to find some other outlet for that portion of the timber which you cannot dispose of as ties?

Your problem will not be solved by one of your customers buying your entire output but rather by your association developing new outlets for that portion of your output which is left on your hands, through locating new users, through repricing slow-moving sizes or adopting other expedients of successful merchandisers to keep all of your products moving simultaneously.

The Producer's Standpoint

By W. P. Arnold*

The sizes of crossties adopted by the railroads were not based entirely on their engineering requirements but represent a compromise between ideal sizes from an engineering point of view and practical production. They provide for the producer a basis for economical utilization of timber and for the user satisfactory utilization from the engineering standpoint. One uniform size of tie for main tracks and another smaller size for side tracks would probably represent ideal use. Production to meet that situation would involve waste and consequent higher prices. In order to obtain a low average cost per tie, therefore, the ideal situation is compromised with the type of production which will

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permit greater economy, the size and price varying in accordance with production costs and service value.

The producer is interested in the sale of crosstie sizes normal to his woods-run production. The railroad is concerned with obtaining its ties at the lowest average cost consistent with engineering requirements. If we define normal woods-run production as most efficient timber utilization, the lowest average cost per tie to the consumer will be a demand conforming to that production.

A demand may be established by the direct limitation of certain sizes or by price differential. If limitation of sizes is established contrary to normal production, an increased average cost per tie must result because of either waste of timber produced in unsalable sizes or of extra sorting. If two or more sizes are grouped at the same sale price, the average price is no less than with a differential price based on production and service value. The producer has neither more nor less difficulty in filling such an order but the incentive for producing a maximum number of the larger sizes is destroyed and the purchaser loses the service value of those sizes. If material is wasted in the woods by the manufacture of a size 3 tie from a log which would have made a size 4 tie or if a top log is left to rot or burn because the size 1 tie which it contained could not be marketed at a profit, then a value is lost which must ultimately be reflected in higher prices for the salable ties.

What Is Woods Production?

The problem of matching production of crossties with demand, with reference to size relationship is not new. As an approach to the problem, two questions are indicated:

1. What is normal production as expressed in size relationship under most efficient timber utilization?
2. How closely is it practicable for the consumer to conform purchases to normal production?

Definite figures on normal production, uninfluenced by size limitation or price, are not available. In 1933, a committee of this association presented figures on production and sales. That committee made the following statement:

"Railroads that purchase only sizes 5 and 4 in the 7-in. thick ties can help themselves if their requisitions conform as nearly as possible to 80 per cent of No. 5's and 20 per cent of No. 4's. Likewise, those railroads using sizes 3, 2 and 1 in ties 6-in. thick will help the producer fill his orders more easily and, therefore, more economically by buying the various sizes as nearly as practical to the following percentages; No. 3, 75 per cent; No. 2, 15 per cent; No. 1, 10 per cent."

In the data presented with that report, it is not shown to what extent the production figures given were influenced by demand. However, from such figures as are available where reasonable price differentials obtain, production of the various sizes has resulted in approximately the following ratios:

Sizes 5 and 4.....2 to 1
 Sizes 3, 2 and 1.....5-3-2

Variations from these ratios exist, of course, in different territories. However, if the consumer varies the demand from these ratios, there will be a trend toward lower average costs if the proportion of the large ties rather than of the small ties is increased.

Any purchaser who buys all No. 4 and no No. 5 ties from any established territory in the Middle West can reasonably anticipate that the cost data upon which his price is based are predicated upon delivering a large number of size 5's as size 4.

A Comparison of Costs

If we assume a theoretical case where orders are placed for ties all of one size, say size 4, there results a loss of incentive for care in producing size 5 ties. An operation which would normally produce 70 per cent of size 5 ties and 30 per cent of size 4 may then produce only 50 per cent of size 5 and 50 per cent of size 4. This is a waste of timber. Since the cost of production is not materially different under the two conditions, the cost of the size 4 ties must ultimately be approximately the average, based on 70 per cent size 5 and 30 per cent size 4. But the customer has lost 20 per cent of the larger ties in manufacture and if there is any advantage in using size 5 ties, a loss has, therefore, been created for the consumer.

As an example, if we assume that in a normal production

of 1,000,000 ties, 70 per cent are of size 5 at \$0.85 and 30 per cent of size 4 at \$0.75, the total selling price is:

700,000 @ \$0.85.....	\$595,000
300,000 @ \$0.75.....	225,000
Total cost	\$820,000
Average price	\$0.82

This average price is that which is paid ultimately by the purchaser who buys only size 4 ties. However, he receives 50 per cent of size 5 and 50 per cent of size 4 ties which, on the above basis of values, represent:

500,000 @ \$0.85.....	\$425,000
500,000 @ \$0.75.....	375,000
Total value received.....	\$800,000

This represents a theoretical loss of \$20,000 in service value to the consumer, as reflected in a substitution of 200,000 size 4 ties for size 5 which the purchaser might just as well have had.

If no more than 50 per cent of size 5 ties is required, perhaps consideration should be given to substituting size 3 ties 7 in. thick for a portion of the size 4 ties, the suggestion being that a similar result in use may be obtained with a division of the requirements into three rather than two sizes, while at the same time obtaining the same or larger than the average size at a lower average cost. Instead of 50 per cent of size 5 and 50 per cent of size 4 ties, the ratio might be 70-20-10 of sizes 5, 4 and 3, 7 in. thick, respectively, the cost of which might be represented as:

700,000 @ \$0.85.....	\$595,000
200,000 @ \$0.75.....	150,000
100,000 @ \$0.65.....	65,000
Total cost	\$810,000

This is lower than the cost based on the purchase of a normal 70-30 production of sizes 5 and 4 or on the purchase of all size 4.

If a producer has a demand for the surplus size 5 ties produced on an order such as that mentioned in the foregoing so that he can offer a price differential to the user, the average cost of the tie must still be higher because of the extra sorting required. It would be a rare coincidence if a producer received orders for different individual sizes or for abnormal size percentages which together approximated normal production. In practically all cases an increased average cost results because both of the waste and the extra sorting.

A still more difficult problem is the maintenance of demand ratio of main line ties to side track ties in line with production. Railroad requirements for the two groups vary from year to year, depending on the relative magnitude of their construction and repair programs. Waste and increased costs here again develop when the group requirements depart appreciably from normal production. Lowest average cost will result if demand is maintained consistent with production.

Discussion

In discussing both of these papers, W. J. Burton (Mo. Pac.) pointed out the difficulties that arise where roads buy too large a proportion of size 4 ties, in comparison with size 5 ties, contending that they are giving too much attention to first cost of the untreated tie and not enough to the final cost of the tie treated and in track. The annual cost of a tie, all factors considered, he said, approximates 15 cents per year, or more than the difference in first cost of size 4 and size 5 ties, and the larger, or size 5 tie, will give more than one year additional service. H. R. Clarke (C. B. & Q.) disagreed with Mr. Burton's conclusions that size 5 ties will give longer life than size 4 ties. He stated that on the average road, with lines of widely divergent traffic, there should be places where each size of tie is most economical and in line with this belief, he contended that there are many places where size 4 ties are more economical than size 5. It has been the Burlington's experience, he stated, that a size 5 tie costs approximately 15 cents more in track than a size 4 tie, while he has no evidence that it lasts any longer. It is for this reason, he said, that the Burlington is using size 4 ties in many of its important lines. In competitive

markets, he concluded, the problem of disposing of all sizes of ties is that of the producer.

W. S. Hanley (St. L. S. W.) attributed part of the difficulty arising from the unbalanced demand for ties in recent years to the increased emphasis which the railways have placed on the maintenance of their main tracks with their requirements for larger ties, as compared with their secondary or side tracks. B. T. Wood (St. L.-S. F.) and Geo. Scott (M. K. T.) stated that it is their practice to take from the producers all of the ties of the various sizes which they produce, using the smaller ties in minor tracks and the larger sizes in main tracks. President Stocking stated that it was the practice of roads in tie-producing areas to accept ties in the sizes produced, while roads which buy off-line are more selective.

Railroads Oppose Extension Of Co-ordinator Law

WASHINGTON, D. C.

J. J. PELLEY, president of the Association of American Railroads, on May 17 sent to Chairman Wheeler of the Senate committee on interstate commerce a letter opposing the passage of the resolution introduced by Senator Wheeler extending for a year the effective period of Title I of the emergency railroad transportation act, of 1933. "Not only has the act failed of its purpose to bring about economies through the operation of its machinery," he said, "but, as construed and applied, it has resulted in preventing normal, ordinary arrangements among railroads whereby desired economies might be accomplished." "Without in any way reflecting upon the present federal co-ordinator," he added, "nothing of substantial value in the way of co-ordination has been accomplished and we see no promise or prospect of future usefulness in continuing the act for another year."

The Railway Labor Executives' Association, on the other hand, is campaigning vigorously for the passage of the extension resolution.

Mr. Pelley called attention to the fact that the railroad association had asked for a hearing on the resolution two days after it was introduced on May 1 but that the committee had reported it on May 7 after Senator Wheeler had declined to grant a hearing but had suggested that the association state its views in writing. In the letter Mr. Pelley said in part:

Mr. Pelley's Letter

The Emergency Railroad Transportation Act, 1933, became a law on June 16, 1933. We are concerned here only with Title I, that being the portion of the law which creates the Federal Co-ordinator of Transportation and defines his powers and duties. The law was suggested by the President of the United States to meet an emergency thought to exist at the time. Title I was limited to one year, with power in the President by proclamation to extend its provisions for an additional year. In due course the act was by executive proclamation so extended, so that unless it is re-enacted or some action is taken to continue its operation it will cease to be effective on June 16, 1935.

There are two important considerations which caused the sponsors of the bill to deem it necessary to create the office of federal co-ordinator and give him certain powers. In the first place, it was thought that certain joint actions which might be taken by the railroads looking toward economies might be in violation of the anti-trust statutes. In the second place, it was feared that certain coordinating projects thought to be desirable in the public interest might be prevented by the action of one or two railroads who would not be willing to go along with the views of the majority of the railroads involved. In order that desirable economies might be effected, the co-ordinator was given authority to approve any project adopted by a majority of the co-

ordinating committees, even though it should be contrary to state or federal anti-trust laws and even though certain railroads less than a majority might object. The co-ordinator was also given authority to bring to the attention of the co-ordinating committees any project in the nature of a desirable reform and to make an order thereon even though it might not be approved by a majority of the railroads involved.

Most of the railroads were willing to be subjected to this type of regulation at a time of profound business depression, when there was the utmost need for the practice of economy and for the prevention of waste in every conceivable way.

During the consideration of the bill by the Congress, over the protest of the railroads and of the gentleman who afterwards became Federal Co-ordinator of Transportation, there was inserted in the act Section 7, consisting of five paragraphs. By paragraph (b) it was provided that the number of employees in the service of a railroad might not be reduced by reason of any action taken pursuant to the authority of the title below the number as shown by the payrolls of employees in service during the month of May, 1933, after deducting the number who have been removed from the payrolls after the effective date of the act by reason of death, normal retirements or resignation, but not more in any one year than 5 per cent of said number in service during May, 1933. It was further provided in this paragraph that no employee in the service of a railroad should be deprived of employment such as he had during the month of May, 1933, or be in a worse position with respect to his compensation for such employment by reason of any action taken pursuant to the authority conferred by this Title. There are other objectionable features in Section 7, but we call attention particularly to these restrictive provisions of paragraph (b).

It was understood at the time these amendments were offered and adopted, first by the Senate and afterwards by the House of Representatives, that the effect of these labor clauses would be to render futile any effort of the railroads or of the co-ordinator to accomplish substantial economies in the way of coordinated action. However, Congress saw proper to adopt these provisions over the protest of the railroads and against the better judgment of many who were advocating the bill.

The result has been precisely as was predicted. The federal co-ordinator has stated many times in public addresses that the effect of including the labor clauses was to prevent in very large degree the economies and waste prevention measures which it was the primary purpose of the act to accomplish.

Economies Must Cause Reduction in Forces

If any substantial economies are undertaken through joint or coordinated action, they can be accomplished only by reducing the number of employees. This is so obvious as not to justify greater elaboration.

Prior to and early in the operation of the act, the railroads, recognizing the need for co-ordinated action in the interest of economy, undertook careful studies of the possibilities of co-ordination in the hope and belief that they might unofficially accomplish a great deal along the line of the declared purposes of the act. It was believed that the labor clauses in the act would not apply unless these co-ordinating projects were ordered by the co-ordinator or one of the co-ordinating committees created by the law. When this contemplated action was brought to the attention of the co-ordinator, that officer, believing that the spirit if not the letter of the law prohibited such action, addressed a communication, bearing date of August 7, 1933, to the several co-ordinating committees placing, by formal reference, under the scope of the act all projects dealing with the unification and co-ordination of facilities and services, so that the labor provisions would apply. I am not criticizing the action of the Co-ordinator in so doing—I am merely calling attention to the fact that not only did the act prevent official action, but, as interpreted and applied by the co-ordinator, it prevented unofficial action looking toward economy, provided such economy could not be accomplished otherwise than by joint action.

It must not be supposed that the railroads have not from time to time prior to the enactment of the Emergency Railroad Transportation Act made progress in the matter of joint use of facilities through agreed co-ordinated action. Studies which had been in progress for many years disclosed the fact that there were 24,399 miles of railroad jointly operated, that there was then joint-use facilities by Class I railroads of 263 engine ter-

(Continued on page 818)

"The Chief Cause of This and Other Depressions"*

Durable goods industries the key to the situation, and they can be revived only by a huge increase of railroad and other business buying from them

By Col. Leonard P. Ayres

Vice-President, Cleveland Trust Company

UNEMPLOYMENT is the most obvious symptom of this depression, as it has been of previous depressions. It is its most serious social feature, its most dangerous political feature, and it may be that it is its most significant economic feature. If we can, by analysis, find out about how many workers are unemployed, and in what kinds of activities they would be engaged if they were normally employed, it may be that we can make progress toward finding out more about the causes of depression.

We know that the people in this country who would be classified by the census as being in normal times engaged in gainful occupations are about 50 millions in number. At the present time about 11 millions of them are out of work, and that number has not changed greatly in the past year and a half. In normal times about half of the workers would be engaged in producing goods through agriculture, manufacturing, mining, forestry, construction, and the like. The other half would be providing services in trade, transportation, the professions, and the other numerous service occupations. Similar proportions hold now among the unemployed. About half of them would normally be at work as producers of goods, and the other half would be busy as providers of services.

Now these facts do not at all indicate that these two great groups of five millions or more each of unemployed are of about equal importance and similar significance when considered as factors in the general problem of unemployment. There is a distinction of the first importance between them. It is that the unemployment among the providers of services is caused by the unemployment among the producers of goods. It is because there has been a great reduction in the output of goods that fewer workers are needed in transportation, in communication, in the professions, in wholesale and retail trade, in banking, in office work, and consequently there are fewer opportunities for workers in personal and domestic services.

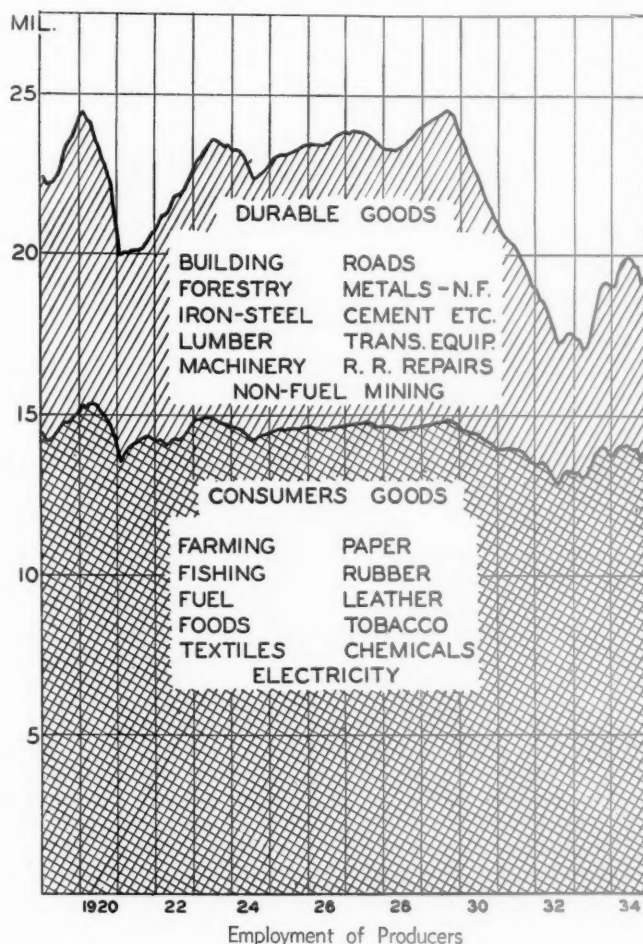
One Half of Unemployment Caused by the Other Half

It is a highly important and significant fact that nearly one-half of the unemployment is mostly caused by the other half of it. If the producers could be put back to work, and kept profitably employed, the depression would soon be over. If the producers were busy, the unemployment problems of the providers of services would solve themselves. It follows then that one way to get more essential information about the depression

and its causes is to find out what classes of producers make up most of the unemployed and why it is that they are out of work.

The census figures tell us that all the producers are divided into two great groups, one of which raises or makes consumers goods, while the others make durable goods. Consumers goods consist of things that we use up or wear out and replace relatively quickly, such as food, clothing, gasoline, soap, tires, tobacco, and the like. Durable goods are long-lasting goods. They include buildings, machinery, automobiles, furniture, bridges, ships, locomotives, cars, and a long list of articles made of the lasting materials such as the metals, lumber, stone, clay, glass, and cement.

Now our recently assembled figures have been giving us information about the producers of these two classes of consumers goods and durable goods which have not



* An abstrast of an essay prepared in response to a request from Senator Josiah W. Bailey of North Carolina, Chairman of a Senate Committee charged with the duty of studying the causes of the present depression. Copyrighted by Cleveland Trust Company. Reprinted by permission.

before been available. They show that in times of depression the really serious unemployment among producing workers is concentrated in the durable goods industries. This is illustrated by the diagram entitled "Employment of Producers," which shows the changes in the employment of producers of goods monthly during the 16 years from 1919 through 1934. The lower portion of the diagram in heavy cross-hatching shows employment among producers of consumers goods, and the upper portion in lighter cross-hatching shows employment among producers of durable goods, the figures have been adjusted to eliminate normal seasonal variations.

During the period of 16 years covered by the diagram there were two major depressions and two very minor ones. In each case the major part of the depression unemployment among producers of goods was concentrated among the makers of durable goods. Their part of this unemployment amounted to 71 per cent of all in the major depression of 1921, to 63 per cent of it in the minor depression of 1924, to 94 per cent of it in the minor depression of 1927-28, and to almost 79 per cent of it in this great depression up to the end of 1934. If we combine the figures covering all four depressions we find that the unemployment among makers of durable goods amounted to 77 per cent of all the unemployment among producing workers.

Three-Quarters of Unemployed Producers in Durable Goods Industries

We may infer somewhat tentatively that it is a rule that during depressions about three-quarters of the unemployment among producers of goods is concentrated among the makers of durable goods. We have already noted that the depression unemployment among the providers of services is largely caused by the unemployment among the producers of goods. We may now combine these several observations into one highly important general conclusion, which is that the most important cause of depressions is unemployment among producers of durable goods.

But there are almost twice as many people in the groups producing consumers goods as there are in those making durable goods, which means that in proportion to the total numbers involved the problems of unemployment during depressions are almost six times as serious in the durable goods industries as they are in the consumers goods occupations. These disparities are still further aggravated by the high degree of concentration of a large part of the durable goods workers in restricted geographical areas, notably in the iron and steel producing communities of the middle-west.

The evidence that has been presented concerning unemployment in four depressions occurring within 16 years is not adequate by itself to support sweeping conclusions about depressions in general, but it can be substantiated by more evidence covering a much longer period. We cannot carry back month by month to years earlier than 1919 the statistics covering the changes in employment among substantially all the producers of goods. We have, however, monthly data showing the changes in the volumes of manufacturing production of durable and consumers goods beginning with 1899. These figures show output rather than employment, and they do not include the production of such groups as the farmers, fishermen, foresters, miners and construction workers.

The diagram entitled "Volume of Factory Production," shows the monthly changes in the physical volume, but not in the value, of the industrial production of durable and consumers goods during the past 36 years.

It is based on the data, the weightings, and the methods used by the Census and the Federal Reserve Board in the construction of their indexes of production. It is believed that the totals for each year are relatively reliable throughout, but due to inadequacy of data the monthly changes prior to 1910 are only approximations.

In the upper section of the diagram the irregular line shows the index of production of durable goods. A straight line computed by the method of least squares and based on the data from 1899 through 1930, inclusive, has been drawn through the irregular index line to show the trend, and to serve as a computed normal from which to measure the plus deviations of the prosperity periods, and the minus deviations of the depressions. The black silhouette just below it shows the percentages by which the production of durable goods exceeded this computed normal each month, or fell below it.

Depressions Not Due to Over-Production

In the lower part of the diagram there is shown the index of consumers goods, made by the same methods and having a computed normal of the same sort. The black silhouette below shows the monthly deviations from that normal.

Fairly conclusive evidence is supplied by the two black silhouettes in this diagram in refutation of the popular theory which holds that depressions are caused by the accumulation of over-production just prior to them. They show that there does not appear to have been any specially important volume of over-production just prior to this depression, and that during the whole period there seems to have been in operation no general rule that over-production before major depressions was notably greater than over-production before minor depressions.

The average of all the plus and minus deviations of the durable goods line is 17, while that of the consumers goods line is only six. This means that over this long period the variability in the volume of output of durable goods has been nearly three times as great as that of the consumers goods, and that consequently the problems of unemployment in the durable goods industries have been correspondingly more serious. The *numbers* of industrial workers producing durable goods in manufacturing are about equal to those *producing* consumers goods, and so the fact that the fluctuations in the production of durable goods are about three times as great as those of consumers goods, goes far toward substantiating the other evidence indicating that about three quarters of the depression unemployment among producers of goods is concentrated among the producers of durable goods.

Our next step should be to examine the evidence still further to find out whether or not decreasing production of consumers goods, just before depressions, or decreasing employment of the producers of such goods, operates to initiate the business declines that later on assume serious proportions, and conversely whether or not increasing absorption of consumers goods starts recovery movements.

Depressions Not Due to Curtailment of Consumer Buying

Probably it is true that the most popularly believed of all theories about business cycles is one which holds that depressions are initiated by decreases in consumer purchasing power, relative to the goods produced, and that recoveries are initiated by increases in consumer purchasing power.

The following table shows for each of the major and minor depressions included in our diagrams whether the first important downward movement of production and

employment was recorded in the consumers goods or in the durable goods, and whether the first vigorous upturn toward the following recovery was begun by the consumers or the durable goods.

portant class of all finished goods produced, we should gain insight into the nature of the changes that cause depressions and recoveries.

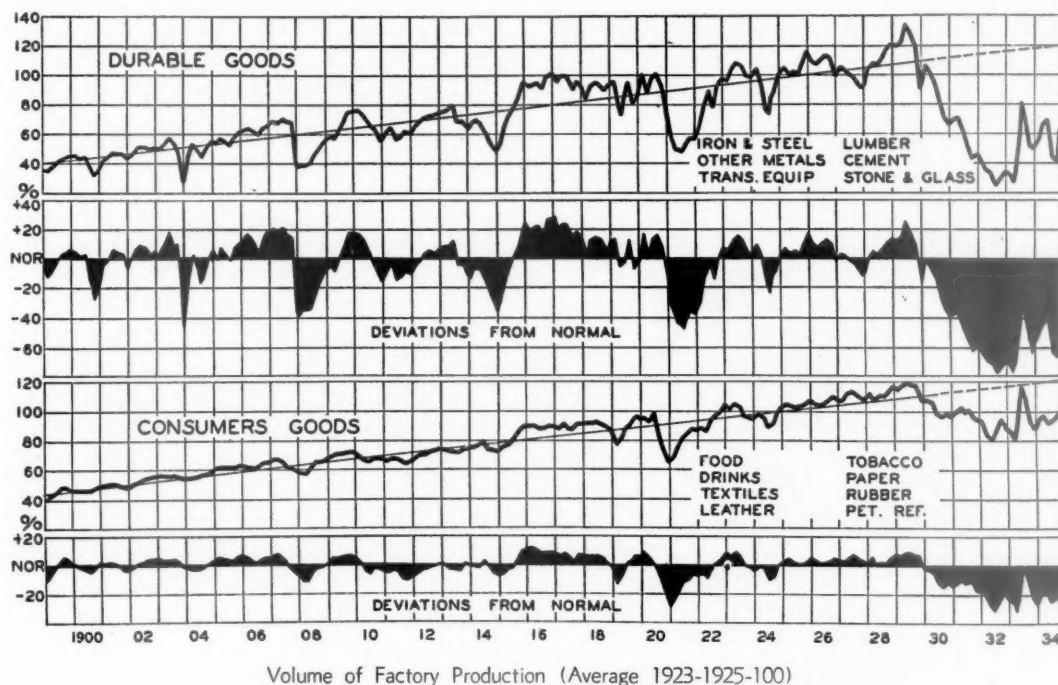
Business Buying and Depressions

It is important that we restrict our classifications of purchases to those of finished goods, or ready-to-use goods, in order to avoid the duplications of purchasing that exist in the records of distribution to business enterprises, and which are absent from the records of retail distribution to individual consumers. Such duplications are, for example, present in the wholesale records of production and distribution in the steps from iron at the blast furnace, to ingots at the steel mill, to sheets at the rolling mill, and finally to the production of the automobile, which then goes to the individual consumer in a single transaction.

Much valuable new information about the distribution of goods has recently been made available by the Census reports on wholesale and retail trade and on the

Years of Depression	INITIATION OF DECLINES AND RECOVERIES			
	As Indicated by Volume of Industrial Production		As Indicated by Employment Among Producing Workers	
	Downturn to Depression	Upturn to Recovery	Downturn to Depression	Upturn to Recovery
1900-01	Consumers	Consumers		
1903-04	Durable	Durable		
1907-08	Consumers	Durable		
1911-12	Consumers	Durable		
1913-14	Durable	Durable		
1919	Consumers	Consumers		
1921-22	Consumers	Consumers	Durable	Consumers
1924	Consumers	Durable	Consumers	Durable
1927-28	Durable	Durable	Durable	Durable
1929-34	Durable		Durable	

The entries in the table show pretty conclusively that there has not been in operation any consistent rule as to the initiation of depressions or recoveries by changes in



the volume of production of consumers goods or of durable goods, or by changes in the employment of the workers producing them. In some cases the first important change at the turning points has been in the one class of output or employment and in some cases in the other class. This leaves us with two important conclusions. The first is that the evidence does not support the theory that changes in individual consumer purchasing regularly initiate either depression downturns or recovery upturns. The other conclusion has already been stated. It is that irrespective of the order in which changes take place when downturns and upturns are being initiated the unemployment which constitutes the most serious condition in all the depressions is that among the producers of durable goods.

The evidence that we have considered so far tends strongly to support the proposition that depressions and recoveries largely consist of changes in the volume of production of durable goods. By and large all the goods of every sort that are produced and sold are purchased either by businesses or by individual consumers. If we could find out in what proportions businesses and individual consumers make their purchases of each im-

distribution of manufactured products, and by the painstaking compilations in a recent volume by Prof. W. H. Lough, assisted by Mr. M. R. Gainsbrugh, on "High-Level Consumption." The importance of the new information lies in the fact that it shows that the distribution of finished goods to consumers is very different from what much recent and current economic reasoning assumes it to be. In over-simplified terms it may be stated that much popular economic reasoning assumes that finished goods are produced by business enterprises and purchased by individual consumers, and that hence the changes in business activity that we are discussing must be caused by reductions and increases in the volumes of individual consumer purchasing.

It is true that in the long run, and in ways that are sometimes direct, and sometimes very indirect, all finished goods are used by, or for the benefit of, individual consumers, but it is not true that all important changes in the volume of purchasing of finished goods are those made by individual consumers. Huge volumes of both finished durable goods, and finished consumer goods are purchased by business enterprises both at wholesale and at retail, in connection with their activities in furnishing

goods and services for the benefit of individual consumers. Hotels make such purchases, but they sell to the individual consumers meals and shelter; theaters make them, but they sell entertainment; public service corporations make them, but they sell gas and electricity, and telephone service. Innumerable other examples could be cited, and they would all reinforce the argument that if we are to examine into the distribution of finished goods to locate the responsibility for the great changes in the volume of purchasing that cause the depressions and recoveries we must take into account not only all individual buying but all business buying also.

Table I shows the allocations as between business purchasers and individual consumer purchasers of all finished and ready-to-use goods produced in 1929. The values used are wholesale and not retail, and most of the figures for purchases by individuals are taken from the book of Prof. Lough on "High Level Consumption," which gives explanations of the methods by which they were derived. Construction is included as though it were a commodity, but only the labor value is used, since the materials of construction are included among the other items.

Business Buys Three-Fourths of Durable Goods

The most important fact shown by the figures of the table is that the purchases of nearly three-quarters of the finished durable goods are made by businesses instead

closely with the figures published by the Census in its report on wholesale trade in 1929, which showed the proportion of all manufactured goods going to individual consumers in that year to be 55.2.

About one quarter of the consumers goods are bought by business enterprises, and this proportion is so large as to indicate that declines and recoveries in business activity may be initiated by changes in business purchasing whether the increases or decreases take place first in the production of durable goods or of consumer goods. This is the chief reason why studies of the priority of such changes at the turning points of business depressions and prosperities do not afford much helpful evidence as to the causes of the turning movements.

The figure for individual consumer purchasing of construction will seem astonishingly low, but probably it is about right. It represents one-half of the estimated value of the construction of one-family houses and private garages as computed from the data on permits and contracts in 1929. The proportion of one-half was used because about one-half of all homes are rented, and were presumably built in the main as business ventures rather than for owner occupancy. Probably many of the remaining single homes were actually built for sale also.

Trade Cycles Caused by Changes in Business Buying

We may now expand our statement about the cause of business cycles. The evidence that has been reviewed covering the records of the employment of producing workers from 1919 through 1934, and of industrial production in this country from 1899 through 1934, and of the sales of finished goods to businesses and to individual consumers, supports the conclusion that trade cycles are chiefly caused by changes in the volume of purchases of durable goods by business enterprises. The chief reason why fluctuations in the purchasing of durable goods are about three times as great in proportion to total value as are those in the purchasing of consumers goods is inherent in the very nature of the goods. In the main the demand for consumers goods is obligatory while that for durable goods is optional. We cannot avoid or long postpone most of our purchases of such things as food, clothing, domestic fuel, soap, tires, and gasoline, and so such buying of consumers goods is obligatory. That is why there is not even in times of depression any very great volume of unemployment among the producers of consumers goods.

By contrast our purchases of durable goods are optional, for individuals and corporations alike are quite free to postpone buying them if they think it is to their advantage to do so. Most existing buildings can be made to serve for many years longer if it does not seem advisable to their owners to replace them. The same is true of locomotives, and cars, and ships, and bridges, and most household equipment, and to a considerable degree even of trucks and automobiles. When purchases of durable goods are being postponed those who are doing the most important waiting are largely the corporations, for in normal times they are the best customers of the durable goods industries. All manufacturing plants, and their machinery, all equipment of transportation, communication, and the public utilities, and all office appliances are furnished by the durable goods industries.

There is a fourth difference between the two classes of goods which is of special importance not only in its economic implications, but in its bearing on the efforts of government to mitigate depressions and to stimulate recovery. It is a difference in the methods by which the production of the two classes of goods is financed. The production of consumers' goods, which are short-

TABLE I.—FINISHED GOODS PRODUCED IN 1929 IN BILLIONS OF DOLLARS

Products	Total Values	Business Commodities		Individual Consumer Commodities	
		Dollars	Per Cent	Dollars	Per Cent
Durable Goods:					
Railroad repair shops.....	\$1.27	\$1.27	100.0
Construction (labor only)...	2.63	2.45	93.2	.18	6.8
Iron and steel.....	2.51	2.21	88.0	.30	12.0
Machinery.....	4.25	3.55	83.5	.70	16.5
Miscellaneous.....	.51	.41	80.4	.10	19.6
Cement, stone, clay, glass..	.75	.55	73.3	.20	26.7
Lumber and products.....	2.44	1.54	63.1	.90	36.9
Non-ferrous metals.....	.65	.25	38.5	.40	61.5
Transportation equipment...	4.50	1.70	37.8	2.80	62.2
Total Durable	19.51	13.93	71.4	5.58	28.6
Consumers Goods:					
Paper	1.37	1.07	78.1	.30	21.9
Printing.....	2.40	1.70	70.8	.70	29.2
Rubber	1.12	.62	55.4	.50	44.6
Petroleum and coal products	2.64	1.44	54.5	1.20	45.5
Coal	1.25	.58	46.4	.67	53.6
Miscellaneous	1.08	.43	39.8	.65	60.2
Chemicals and drugs	1.16	.26	22.4	.90	77.6
Textiles.....	6.42	1.32	20.6	5.10	79.4
Food, processed	11.03	1.73	15.7	9.30	84.3
Tobacco	1.41	.14	9.9	1.27	90.1
Farm prod. not processed..	4.88	.24	5.0	4.64	95.0
Leather	1.24	.04	3.2	1.20	96.8
Total Consumers	36.00	9.57	26.6	26.43	73.4
Total all Finished Goods.	55.51	23.50	42.3	32.01	57.7
Total manufactured goods....	46.75	20.23	43.3	26.52	56.7

of by individual consumers. If passenger automobiles were classified as being consumers goods, the altered figures of the upper part of the table would show that the purchases of five-sixths of the finished durable goods are made by businesses instead of by individual consumers. This indicates that the changes in the volume of purchases of durable goods which are chiefly responsible for causing depressions and revivals of trade activity are predominantly the results of business decisions. They are mostly changes in the volume of buying by corporations.

It is believed that the data are adequately reliable guides for the use here made of them. The figures of the table show that the percentage of all manufactured goods going to individual consumers is 56.7. This corresponds

time goods, is largely done by short-term credits, and it presents relatively little difficulty even in times of serious depression. The problems of financing the production of durable goods are entirely different, and far harder. These are long-time goods, and in the main their output is financed by long-term credits. Durable goods are not mainly bought in stores at retail and paid for out of wages. They are largely purchased from the producers, and paid for out of borrowed funds.

Business Buying Determined by Profits

New highways and ships, public buildings and bridges, factories and industrial equipment, are usually paid for by funds raised through bond issues. Locomotives and railroad cars are purchased through the sale of equipment trusts. Most residences and many other buildings are constructed with the help of money secured through mortgages. Automobiles, furniture, and such household equipment as ranges and refrigerators, are largely paid for over periods of many months by the use of finance company notes.

This distinction goes far toward explaining the lack of success so far attained by our managed recovery program in its attempts to solve the depression problem of unemployment by increasing consumer purchasing power through giving more workers and more unemployed people more money to spend for consumers goods. During the period of the past two years in which these attempts have been pushed with the greatest vigor the flow of long-term financing by corporations through bond issues has almost ceased, and there are no present evidences that it is likely to be soon resumed on any large scale. The great expenditures of public funds do not succeed in priming the business pump and stimulating recovery because they are mostly effective in sustaining the demand for consumers goods which do not account for much of the unemployment, while other influences, chiefly related to doubts about profits and fears about money, continue to restrict the production of durable goods which do account for most of the unemployment among producers, and indirectly for most of the rest of the unemployment.

There is involved in the production of durable goods an economic principle of special significance, and it is well for us to note how this has worked out in earlier recovery periods in our history. In the past the rapid and robust recoveries from previous business depressions have almost always been accompanied by important increases in construction and in the creation of new industrial equipment. In large part these increases have been in the construction of new buildings, but they have also included waves of activity in the construction of ships, of canals, of railroads, of war materials, and of automobiles.

These constructional activities have always been significant features of the recoveries from our business depressions. They have come when men of courage and initiative took advantage of low interest rates to float bond issues for financing extensions of railroads, enlargements of plants, and improvements of equipment. Such new construction is the most effective force making for business recovery because the wages that are paid produce a prompt restoration of the purchasing power of the workers without resulting in the output of new goods which workers must currently buy if the work is to continue.

Money paid for new building is a most effective aid to recovery because it is present purchasing power derived from borrowed funds. The same is true if the construction creates canals, or railroads, or war materials, which will be paid for out of long-term bonds,

and it is largely true if it produces automobiles, which are commonly paid for over a long series of months. In every such case the work goes forward, and the wages are paid, without its being necessary for these workers, or other workers, to purchase from current wages the goods that are being produced.

We need have no fear that as a nation we shall not need in the future as large an output of durable goods as we have had in the past. There is no limit to the amounts of durable goods that we can use if we can get them. Our present accumulation of them largely constitutes our national wealth. We shall need to keep on increasing our production of them until American families are much better housed than they are now, and far more fully provided with services that public utilities can supply. The task of the durable goods industries is to continue building, and rebuilding America, and it has no limits that we can foresee.

The conclusion reached from the evidence that has been reviewed, and from the consideration of the differences between durable goods and consumers goods as factors in our economic life, is as follows: *Trade cycles are mainly caused by changes in the volume of purchases of durable goods by business enterprises, actuated by changes in the prospects for profits.*

Recovery Depends Upon Increased Business Buying

This brings us to the question why profits decline, and here it is all too easy to have resort to the obvious but illogical answer that it must be because individual consumers reduce their purchases. This easy solution really is illogical because there is ordinarily no reason why the great mass of individual consumers should decide to buy less as long as their incomes are not reduced. Such mass restrictions of the exercise of individual satisfactions do not spontaneously develop. Something else has to happen first, and that something else is curtailment of buying from business enterprises by other business enterprises, and the reason for this is the actual or threatened reduction of profits that we are discussing.

Similarly the theory that changes in consumer purchasing by individuals account for the business cycle fails to explain recoveries. It is hard to believe that at the lowest point of a depression large number of individuals simultaneously decide to increase their purchasing despite the fact that their incomes which mostly come from business have not been raised. On the other hand business enterprises can and do curtail their purchasing when the prospects for profits seem doubtful, and this may happen at the end of a prosperity period even before their incomes are reduced. It happens when changed relationships between costs of production and the sale prices of goods indicate that profit margins will be reduced, and then the reductions in purchasing are made possible by using up stocks of raw materials, and postponing outlays for repairs, replacements, and improved equipment.

At the bottoms of depressions it is the business enterprises that start the flow of increased purchasing that initiates recovery. They do it when changed relationships between costs and prices bring improved prospects for profits. They finance these increases by using their working capital, or their accumulated surpluses, or their credit facilities. The fact that it is extremely difficult to induce a business recovery by increasing the purchasing power of the individual consumers is being impressively demonstrated in this depression. Since 1930 billions of additional dollars have been paid to workers through the wage increases under the codes, and many billions more disbursed to individuals by relief

payments, public work projects, and bonus settlements to veterans and farmers.

Why Government Expenditures Do Not Bring Employment

These payments have helped sustain the consumers goods industries, and they have greatly aided retail trade, but they have done little to revive business purchases of durable goods, and so they have not greatly decreased unemployment. The reason for this is that they have not been accompanied by any general improvement in the prospects for business profits. On the contrary, the increases in wage costs imposed by the codes, and the innumerable restrictions of the codes, have impaired profit prospects, while the huge continuing federal budget deficits have engendered doubts about money which have made business hesitant about assuming the risks of expanding enterprise.

There is no general rule or formula to explain the beginnings of general reductions or increases in business profits, or impairments and improvements in the prospects for profits for there are numerous combinations of circumstances which may cause these changes. In 1929 the breaking of the speculative boom in stocks served sudden notice that a depression was coming because the losses involved were so huge, and involved so many people, that a considerable business curtailment was bound to follow. The great depression that has followed is only in partial degree the result of the speculation that preceded, but in this country it was started on its way by the collapse of the security prices. Probably the severe credit strains induced by commodity speculation may fairly be considered to have been the most important element in bringing on the depression of 1921.

In 1914 a mild business recession was under way, and apparently a recovery was beginning, when the outbreak of the World War so disrupted normal trade as to bring on the brief, but serious, depression of 1914-15. So one might by careful study assign to each of a long series of depressions some combination of circumstances that could, with good reason, be considered as the determining factor in initiating the downturn, and similarly other reasons could be cited for the beginning of the upturns. All of them would be explanations of the causes of the downward and upward turning movement in the general flow of business profits. Probably the best brief discussion of the nature of the factors involved is to be found in the recent volume by Prof. Sumner H. Slichter, entitled "Towards Stability."

The only inclusive rule is that any change in conditions which makes the business men who control enterprises generally believe that the prospects for profits have become doubtful in a period of prosperity will start a restriction of purchasing and initiate a downturn in business activity, while any change in conditions justifying a general change of prospects of the contrary sort during a depression will initiate a recovery. Probably it is true that the controlling factors in these changes have in the past usually been the development of periods of credit stringencies, which have initiated downturns and of credit ease, which have started recoveries.

How Improve and Stabilize Business?

It is true that before most of the depressions of the past one hundred years in this country stock and bond prices have declined, and short-term interest rates have considerably advanced, shortly before business activity has turned decisively downward. Similarly it is true that just before most of the recoveries from depression stock and bond prices have turned up, and short-term interest rates have been low. These facts support the argument that the recurring periods of credit stringency

and of credit ease have probably been the most usual initiating causes of the major fluctuations of business activity, but clearly they have not been solely responsible for starting them.

There is no simple legislative formula by which business activity can be stabilized in a capitalistic economy, so that the fluctuations of booms and depressions will be ironed out. Relative stability can be attained, but not by means of new laws designed to enforce it. Stability of business activity depends on the stability of the fundamental conditions under which business operates. That kind of fundamental stability is the product of the drab and undramatic exercise of national integrity and self-restraint. It involves persistent adherence to at least seven national policies.

1. Peace, and the enduring prospect of peace.
2. A sound money in which both our citizens and those of other countries have full confidence.
3. Balanced national budgets.
4. A sound banking system, independent of political influence.
5. The limitation of bank credit to loans fully justified by the demonstrated earning power of the assets on which the loans are based.
6. The restriction of speculation financed by credit.
7. Such negative regulation of business operations as experience may have proved necessary to prevent abuses, dishonest competition, and exploitation, but with a minimum of positive regulation designed to control wage and price competition, or to favor special group interests.

Throughout this analysis the object has been to identify and examine controlling factors in business cycles, rather than to consider and evaluate auxiliary contributing influences.

It is not the intention of the writer to assert that changes in the volume of purchases of durable goods by business enterprises constitute the sole or exclusive cause of business cycles, for there are clearly many other contributing influences. It is however his conclusion that this is the controlling factor accounting for most of the depth of the depressions, and most of the vigor of the recoveries, of the peace-time cycles of recent decades.

* * *



At the New Pennsylvania-Reading Seashore Lines Terminal at Atlantic City, N. J.

Claim Agents Meet at New York

More than 300 representatives discuss the vital factors involved in personal injury cases

THE vital factors involved in the settlement of personal injury cases were given thorough consideration by the 300 representatives of the railroads attending the annual convention of the Association of Railway Claim Agents at New York on May 15-17, Parks C. Archer, general claim agent of the Alton, presiding. While the program was arranged to bring about a discussion of the problems of railway claim work, it also included addresses on more general railway subjects.

Officers elected for the ensuing year are: President, H. A. Rowe, manager claims department of the Delaware, Lackawanna & Western; vice-presidents, P. M. Gatch, general claims attorney of the Illinois Central; L. R. Willis, claim agent of the Chesapeake & Ohio (re-elected); and F. D. Fauser, general claims attorney of the Wabash (re-elected); and secretary-treasurer, F. L. Johnson, claim agent of the Alton (re-elected). The 1936 annual meeting of the association will be held at St. Paul, Minn., probably in June.

The convention was addressed by Roy B. White, president of the Western Union Telegraph Company and formerly president of the Central of New Jersey, and by F. A. Williamson, president of the New York Central, who complimented the association on the work being done by its members and on their zeal in adhering to principles that permit no departure from truth and justice and require sympathetic treatment of unfortunates. Isaiah Hale, safety superintendent of the Atchafalaya, Topeka & Santa Fe, spoke on "Safety and What It is All About," showing how co-operation and a complete understanding of the problem by all employees will do much to advance the safety and security of passengers and employees.

Grade Crossing Committee Report

The Grade Crossing committee, of which W. H. Failing, claims attorney of the Central of New Jersey, is chairman, reported an increase of 893 accidents, 43 deaths and 603 injuries in highway crossing accidents during 1934 as compared with the previous year. While there was an increase in accidents in 1934, as compared with 1933, the record was still below the peak of 1922 and indicates that the railroads are doing their part in the prevention of accidents on the highways. In 1922, when 12,000,000 automobiles were registered there were 1,810 persons killed and 5,383 injured in railroad-highway crossing accidents, while in 1934, with approximately 24,000,000 automobiles registered, there were 1,554 persons killed and 4,300 injured. In contrast to this record, there was an increase of over 100 per cent in fatalities on the highways during the same period. The number of accidents and the number of persons killed and injured since 1928 are as follows:

Year	Accidents	Killed	Injured
1928	5,800	2,568	6,667
1929	5,975	2,485	6,804
1930	4,853	2,020	5,517
1931	4,100	1,811	4,657
1932	3,499	1,525	3,989
1933	3,235	1,511	3,697
1934	4,128	1,554	4,300

An analysis of the grade crossing accidents in 1934

shows that 3,322 involved a collision of a motor vehicle and a train and of these, 1,287, or 39 per cent, were instances in which motor vehicles ran into the sides of trains and resulted in the death of 287 persons and injuries to 1,865. Of these 1,287 accidents in which motor vehicles ran into sides of trains, 1,105 were passenger automobiles, 174 motor trucks, 7 motorcycles and 1 motor bus.

Dr. Frederic W. Bancroft, chairman of the Committee on Fractures of the American College of Surgeons and director of surgery, Fifth Avenue Hospital, New York, spoke on "Economic Value of Immediate Traction in the Treatment of Fractures of the Long Bones," illustrating his remarks with lantern slides. John W. Freels, local attorney of the Illinois Central, presented a paper on "The Modern Trend of Grade Crossing Decisions." C. S. Williston, general solicitor of the Pullman Company, presented a paper on releases, in which he described a release as a unilateral instrument executed by the person or persons who may have the right to assert a cause of action against another and in which he discussed the legality of releases. Smith R. Brittingham, assistant general solicitor of the Seaboard Air Line, spoke on "Evolution in the Law of Negligence" in which he traced the developments of the law of negligence up to the present time.

The Last Clear Chance

Edwin W. Lawrence, general attorney of the Rutland, presented a paper, entitled "The Last Clear Chance," in which he discussed the last clear chance doctrine and its relation to various cases since 1842. The last clear chance doctrine, he said, is invoked generally by a plaintiff to save his case from defeat because of his own negligence. "In investigating accidents and making settlements," he concluded, "one should not consider the railroad free from liability merely because he finds negligence of the plaintiff ever so clearly. Such negligence will, of course, become important in making a defense, but this defense will be met by a claim that the railroad employees had 'the last clear chance' to avoid the accident. Pertinent questions are: Did they discover the peril? If not, should they have discovered it? Could they then reasonably have avoided the accident by applying brakes, giving warning or by other means; did they have all the equipment they should have and was it in order? All circumstances surrounding the accident will be important in meeting such claims and, in view of the short space of time involving the conduct of the men, small matters may become determinative."

N. S. Draughon, claim adjuster of the Gulf, Colorado & Santa Fe, spoke on "What I, a Field Man, Would Do If I Were Boss." "If I were boss," Mr. Draughon said, "I would strive to emulate the many worthy examples that have been set in his field of action. I would endeavor to obtain the benefits to be had by a studious attitude. My purpose would be to approximate the strides of progress and to adjust my actions to the trends and circumstances of the times. While I cannot envision the multiplicity of detail of the course I would pursue, I would be assured that if I became well grounded in

the fundamentals of character, knowledge and industry that have served as standards and guide posts for those who have served in other days with such distinction and honor, the same fundamentals would serve to direct my course."

Theodore Short, claim agent of the Missouri Pacific, presented a paper on "The First Five Years," in which he described the problems confronting a claim agent during his early years of employment. J. C. McCune, assistant director of engineering of the Westinghouse Air Brake Company, presented a paper on "Railway Progress as Exemplified by Air Brake Development," in which he described the development of the air brake from 1867 up to the present time. Robert Irwin, general claim agent of the Atchison, Topeka & Santa Fe, spoke on "Imagination as an Element in Efficient Claim Agency," dealing with common sense, honesty, hard work, loyalty and imagination.

Railroads Oppose Extension Of Co-ordinator Law

(Continued from page 810)

minals, 1,366 less-than-carload freight houses, 1,902 passenger stations, 618 yards, 472 large bridges, and that there were 1,013 points where freight cars were interchanged at which inspection was performed by men jointly employed.

As the depression increased in intensity and the traffic of the railroads diminished, there was naturally an increasing urge toward the co-ordination of terminals, the discontinuance of trains, and the use of facilities jointly. The movement toward the accomplishment of these desirable economies was stopped by the enactment of the Emergency Railroad Transportation Act and the action of the co-ordinator in applying it. It can not be said, therefore, that the act was simply harmless—it was positively harmful in preventing economies which the railroads had hoped to bring about. Joint use of facilities has been a progressive activity and has been increasing continuously for many years until it was arrested by the provisions of the act.

The co-ordinator has said that the labor clauses of the act converted him from a doer of deeds into a prober of possibilities. More than 600 projects have been studied by the co-ordinating committees, and, in many instances, with the co-operation of the co-ordinator's staff, with a possible suggested savings of more than \$18,000,000 per annum. None of these projects could be adopted by reason of the unfortunate provision to which we have referred.

It must not be thought from these observations that the railroads are desirous of increasing unemployment by dismissing their faithful employees. It has never been the policy of railroad management, except as a result of dire necessity, to deprive their faithful employees of the means of livelihood. It can not be asserted that railroad management has ruthlessly or cruelly exercised its right to reduce forces. Men have been laid off only when absolutely necessary and have been returned to employment in the order of their seniority as fast as conditions would permit. It is, however, manifestly unfair to prohibit the railroads from resorting to ordinary methods for retrenchment and economy in the face of declining traffic and falling revenues. They should be given the same privilege that is accorded to other industry to balance their budgets even though the process is brought about by reducing employment.

Studies Can Be Completed by A. A. R.

The federal co-ordinator, prohibited by the labor clauses from co-operating in measures of economy, has devoted himself most assiduously to the study of problems in the field of transportation, in which studies he has been aided by the railroads and by those who operate other forms of transportation, as well as by the general public. He has incorporated these studies in numerous reports and recommendations, many of which have been valuable. He has made recommendations to Congress with respect to legislation, and the railroads are heartily in accord with

the co-ordinator's suggestions dealing with the regulation of all forms of competitive transport. It is submitted, however, that these studies, if not now complete, can and will be carried on by the Association of American Railroads in co-operation with the Interstate Commerce Commission.

Co-ordinator Can't Improve Financial Situation

In the report of the committee which accompanies the resolution extending the term of the co-ordinator it is pointed out that the financial condition of the railroads has not improved in the two years during which the Emergency Railroad Transportation Act has been in force and that the railroads have been heavy borrowers from the Reconstruction Finance Corporation. This is true, but there is nothing in the act under which the co-ordinator can improve this situation. He has been able to accomplish nothing in the way of improving the financial condition of the railroads, and for this result he is in no way censurable. It is said in the report that the co-ordinator has made valuable recommendations with respect to merchandise traffic, passenger traffic, and car pooling. These recommendations have been considered by the railroads and if they embody valuable suggestions the continuance of the office of co-ordinator is not necessary for their adoption.

Upon principle we submit that no officer of the government should be given the power now vested in the co-ordinator unless at the same time he is clothed with responsibility for results. Congress in the Interstate Commerce Act and other statutes regulating the railroads has laid down in more or less definite fashion the rules whereby the railroad industry is to be regulated. The Emergency Railroad Transportation Act, however, confers upon a single individual very broad powers in the field of management, thereby invading the domain of managerial discretion without any limitations or standards by which his conduct is to be measured. He is the sole judge of what shall be done to effect economies or prevent waste. This, we submit, is more power than should be given to a single individual, particularly since the statute furnishes no chart or compass whereby his conduct is to be measured or controlled. It is true that the present co-ordinator has used his power very sparingly, indeed, and has in fact made but a single order, and that one which affected but a limited number of railroads. But the grant of arbitrary and unlimited power is not rendered less objectionable because it is lodged in the hands of a man who uses it sparingly. We must lose sight of the individual and look at the principle involved, a principle which is contrary to the spirit of our law and inconsistent with the control of these properties by their owners. The regulation of railroads is very complete; they are controlled as to all of their activities which may affect the public interest. In the matter of duties purely managerial, the fact of private ownership should be recognized, and these functions should not be committed to a governmental officer, however careful and well informed.

No Prospect of Future Usefulness

Your attention is called to the matters here presented in the hope that Title I of the Emergency Railroad Transportation Act will be permitted to expire on June 16th next. It has proved to be a burdensome feature of our regulatory system. Without in any way reflecting upon the present Federal Co-ordinator, nothing of substantial value in the way of co-ordination has been accomplished and we see no promise or prospect of future usefulness in continuing the act for another year.

In closing, your attention is directed to the fact that since the enactment of this legislation, the railroads formed the Association of American Railroads, with authority vested in its board of directors to effect all the economies contemplated in the Emergency Transportation Act.

Senator Wheeler's resolution to extend the effective date was reached on the Senate calendar on May 20 and Senator Wheeler asked for its consideration but it was postponed because of the absence of Senator Hastings, of Delaware. Senator Wheeler told the Senate that the railroad companies themselves are opposed to the extension but that "this is one of the measures which, I understand, the administration is desirous of having passed at this session of Congress," and that "likewise the railroad brotherhoods are anxious to have it passed."

Cost of Employee Accidents, 1932

Inequities of present system said to argue for federal workmen's compensation law

WASHINGTON, D. C.

JOSEPH B. EASTMAN, federal co-ordinator of transportation, on May 21 made public a report on the "Cost of Railroad Employee Accidents, 1932," prepared by the Section of Labor Relations of the federal co-ordinator's office, as a result of a suggestion made to the Co-ordinator by Senator Robert F. Wagner, of New York. The study was made under the direction of Otto S. Beyer, in charge of the Section of Labor Relations. It deals with the payment made in 1932 by the Class I railroads of the country as compensation for accidents to their employees, and provides the factual background which is said to be necessary in appraising the financial results of the existing system of employee accident compensation in the industry.

Beyer Memorandum

In a memorandum to Mr. Eastman, Mr. Beyer said: "The question as to what constitutes the most appropriate and the most equitable method of compensating for railroad employee accident cases has long been a subject of controversy. For employees in industry generally, compulsory workmen's compensation, administered by governmental authority, has been accepted as the best solution of the problem. This principle, however, has not been adopted for railroad employees engaged in interstate commerce, in spite of repeated attempts to obtain the enactment of such a federal workmen's compensation law. These interstate employees are subject to the Federal Employers' Liability Act, with benefits depending upon the outcome of bargaining between employees or their families and representatives of the railroad companies or upon court actions, rather than upon a scale of benefits determined by statute. This report represents an attempt to appraise the existing system of employee accident compensation in the railroad industry in terms of its financial results. While total costs and average awards are not the only factors to be considered, they are fundamental to an understanding of the objections that have been advanced against the existing system and of proposals for its reform. The thanks of the Section of Labor Relations are due to those railroad officials who made the study possible by compiling the basic data from their records."

The introduction and summary are as follows:

Introduction and Summary

The existing system of compensation for railroad employee accidents has been the subject of a great deal of criticism for many years. It has been attacked as inequitable because of the variation in awards under different modes of settlement and in different sections of the country, and as costly and uncertain, because, for many accident cases, it relies ultimately upon recourse to judicial action.

Jurisdiction over these cases is divided between the states and the federal government. Intrastate employees who come within the jurisdiction of state employers' liability or workmen's compensation acts receive awards which vary according to the laws and customs of the various states. The rest are covered by the federal employers' liability law, and compensation awards depend, not on a fixed scale of compensation, but upon the outcome of bargaining with railroad lawyers and claim agents or upon court actions.

Since the report of the Sutherland Commission in 1912, no

large body of data has been gathered on the cost of railroad employee accidents which would permit an analysis according to the manner of settlement. An inquiry was therefore addressed to all Class I railroads in order to determine their employee accident costs in 1932 and the allocation of these costs according to the type of accident and the procedure by which payments were made.

Accident Costs in 1932

In the year 1932 all Class I railroads of the United States paid out a sum of more than \$12,000,000 on about 20,500 employee accident cases. These payments were exclusive of medical, legal and administrative expenses. The average payment of nearly \$600 does not, however, properly reflect the average cost of employee accidents, because some of the cases involved partial payments, and complete settlement was not made in 1932. The total number of accident cases actually closed out with payments in 1932 amounted to 18,700, and the total compensation, including prior payments on these cases, amounted to \$12,061,173. The average payment was about \$645.

This average conceals the wide variation in the amounts of money paid for different types of accidents and according to different modes of settlement. Cases of minor disability received less than 4 per cent as much on the average as major disability or death cases. Employees killed or injured in train operation accidents were awarded more substantial benefits than those killed or injured in non-train accidents. Likewise, payments secured as a result of a judgment under the Federal Employers Liability Act were far larger on the average than settlements under that act or compensation obtained under a state employers' liability law or workmen's compensation act. It was also found that accident payments on railroads in the Eastern district of the country tended to be higher than those in the Southern or Western districts for the same type of case.

Many Factors Determine Compensation

All these factors,—the type of accident, mode of settlement and geographical location,—affect the outcome and determine the amount of compensation paid. The manner of settlement particularly makes it difficult to secure exact statistical comparisons of average payments. Judgments and settlements are usually paid in a lump sum, whereas workmen's compensation awards are often spread out over a period of weeks or years. In the latter type of case the average amount of benefit cannot properly be determined from the number of cases and the amount of payments made in any one specific year because of these installment payments.

An adjustment is needed to make average payments for various classes of accident cases comparable. This adjustment can be made either by calculating the amount of future payments necessary on the 1,800 cases of workmen's compensation claims which were still being paid on at the end of 1932 or by eliminating these cases entirely. In this study such cases have been eliminated. Average compensation can therefore be calculated based on the cases closed out with a final payment in 1932, since payments made on these cases in years prior to 1932 have been included.

A further factor must be taken into account in interpreting the average cost of railway accidents. The total number of cases closed out in 1932 amounted to 35,575, but nearly one-half of these, or 16,876 cases, were closed without any money settlement. If the cases for which no compensation was paid are included in the total, the average payment on all cases combined becomes \$339, instead of \$645.

Three hundred thirty-nine dollars therefore represents the average amount, based on 1932 experience, which a railroad em-

ployee and his dependents may expect to obtain after putting in a claim for accident award.

Average Payments By Type of Accident and Manner of Settlement

Average payments by type of accident and mode of settlement are, however, of far greater significance than a single over-all average, both because the number of claims upon which no payments are made is so large and because of the great variation in the amounts paid for different types of cases.

In 1932, 711 cases of railroad employee accidents resulting in death were finally closed out with payment. The total compensation paid on these cases amounted to \$3,242,600. They comprised only 4 per cent of the total number of cases closed with payment, but accounted for 27 per cent of the total cost of all accident cases. The average payment on death claims resulting from train accidents amounted to \$5,306, and for deaths resulting from non-train accidents, \$2,950. Cases involving court suit and judgment under federal law averaged \$15,234 for train accident deaths and \$5,689 for non-train accident deaths. Settlements¹ for train deaths averaged \$4,679, and for non-train deaths, \$2,673. Payments for deaths under state workmen's compensation or employers' liability laws averaged a little more than \$3,100 for train as well as non-train death cases. There were 65 additional death cases reported that were closed without payment.

There were 1,329 accident cases of major disability closed with payment in 1932, upon which a total amount of \$5,944,700 was paid. Although major disability cases comprised only 7 per cent of the total number of accident cases, they accounted for 49 per cent of the total cost. The average payment was \$4,473, only a little less than the average amount paid for death cases. The average cost of settlements for major disabilities amounted to \$4,916. The average cost of these cases in which a judgment award was made under federal law amounted to \$7,419. The average cost in state cases amounted to \$2,413. Only 55 major disability cases were closed without payments.

There were 33,415 minor disability cases, or 94 per cent of the total, closed out in 1932, both with and without payment. Of this number, 16,659 cases were closed with payment at an average cost of \$173. Yet this large number of cases accounted for only 24 per cent of the total accident cost. The average payment for settlements of minor disability cases was \$165; for federal judgments, \$488; and for state cases, \$186.

It is estimated that nearly 80 per cent of all railroad employee accident cases closed with payments in 1932 came under the jurisdiction of the Federal Employers' Liability Law.² Only a small proportion of these cases ever reached the judgment stage. Nine per cent of the major disability and death cases and one per cent of the minor disability cases got this far in 1932, so that more than 98 per cent of all types of federal accident cases closed with payments were settled out of court. The proportion of judgments in state cases is probably even smaller, since many of them come within the provisions of workmen's compensation laws.

I. C. C. Statistics on Employee Accidents

The data on the number of railroad employee accidents contained in this report cannot be compared with the statistics published by the Interstate Commerce Commission in its annual Accident Bulletin. Many of the cases closed out in 1932 were the result of accidents occurring prior to 1932, while the commission's accident data is based upon the number within a given calendar year. Furthermore, an injury to an employee is defined by the commission as an injury "sufficient to incapacitate him from performing his ordinary duties for more than three days in the aggregate during the 10 days immediately following

the accident." There are injuries included in the data obtained for this report which would not be classified as injuries according to the above definition.

Nevertheless, Interstate Commerce Commission data present the railroad accident situation over a period of years with a completeness impossible to obtain from any other source. These figures indicate that railroad safety records have materially improved during recent years, although the number of railroad employees killed and injured is still so large as to constitute a problem of major importance.

In Table 1 are summarized the commission's statistics on employee accidents from 1924 through 1933. The number of deaths would be increased by more than 10 per cent if employees who died more than 24 hours after the accident were included in the

TABLE 1
NUMBER OF EMPLOYEES KILLED OR INJURED IN REPORTED STEAM RAILWAY
ACCIDENTS, 1924-1933

Year	Number of employees		Number of employees in service, per employee	
	Killed	Injured	Killed	Injured
1933	533	15,932	1,870	63
1932	579	17,742	1,829	60
1931	677	23,358	1,907	55
1930	977	35,872	1,562	43
1929	1,428	60,739	1,193	28
1928	1,329	70,873	1,277	24
1927	1,570	88,223	1,136	20
1926	1,672	111,903	1,091	16
1925	1,599	119,224	1,118	15
1924	1,543	125,319	1,164	14

Interstate Commerce Commission, Bureau of Statistics, *Accident Bulletin* No. 102, Calendar Year 1933, Washington, D. C., 1934, p. 89.

death cases. These figures show that one employee was killed for every 1,164 employed in 1924 and that one out of every 1,870 employees was killed in 1933. An injury was reported for every 14 employees in 1924 and for every 63 employees in 1933. Both the number of deaths and injuries have decreased faster than employment.

In 1933 there were 533 employees killed³ and 15,932 injured. Seventy-three other employees died after 24 hours or more from the time of injury. In 1932 there were 579 reported deaths and 17,742 injuries. This number of deaths was likewise increased by 73 who died more than a day after the accident in which they were injured.

Train and engine service occupations are among the most hazardous in railroad employment. About 50 per cent of all railroad employee deaths and 38 per cent of all injuries occurred among train and engine men in 1932, although they constituted only about 19 per cent of all railroad employees in that year.

Changes Since the Sutherland Commission Report

The data obtained for this inquiry have been compared with figures of the cost of railroad accidents collected by the Sutherland Commission for the years 1908 through 1910, and with the average payments under certain workmen's compensation laws.

The Sutherland Commission reported that there were about 50,000 railroad employee accident cases annually from 1908 through 1910, and that the annual cost to the railroads was about \$10,000,000. The data presented in this report show that by 1932 the total number of cases had decreased about 30 per cent, while the total cost had increased 20 per cent. Average payments on all cases, including those closed without payment, were about 70 per cent larger in 1932 than during the period 1908-1910. This increase in average payments has been largely due to the increase in payments made for death and major disability cases.

A Comparison With Workmen's Compensation Laws

Average payments for railroad accidents resulting in death were less than similar awards made under the Longshoremen's and Harbor Workers' Compensation Act and the District of Columbia Workmen's Compensation Act for all types of settlement except judgments under the Federal Employers' Liability Act. For non-train deaths the average payment in 1932 was less than one-half of similar awards made under these two com-

¹ "Settlements," as used in this report means accident cases, other than state cases, compensated as a result of agreement between the railroad and the injured employee either without suit or during or after suit.

² In the questionnaire inquiry railroads were asked to classify accident cases closed with payment in 1932 as (a) judgments under the Federal Employers' Liability Act, (b) state cases, including judgments, settlements and workmen's compensation law cases, (c) settlements, which included all other cases. These latter settlements were therefore cases in which ultimately a right of action lay in Federal court or cases which the reporting railroads considered as not covered by state laws but for which this issue may not have been raised. The judgment of the reporting railroads as to the classification of settlements has been accepted as correct, but because there must have been cases in which the question of jurisdiction was uncertain, the proportion of cases coming under Federal jurisdiction is presented as an estimate rather than a direct conclusion from the data collected.

³ Includes one suicide. There were no employee suicides reported in 1932.

pensation laws, and for all cases combined it was 71 to 78 per cent of the average award under the longshoremen's act and 62 to 68 per cent of the average under the District of Columbia act.

Conclusions

The statistics of accidents costs presented in this report, however abstract they may appear when confined within the somewhat academic bounds of a statistical table, represent great disparities in the treatment of railway employees and their families who may be the victims of industrial accident. The few who are fortunate enough to be able to bring their cases to the attention of a sympathetic federal jury, particularly in the Eastern states, may receive liberal awards, but only about 1.5 per cent of all cases closed with payment were settled in this manner in 1932. At the same time it must be remembered that in this study the costs of litigation have not been subtracted in determining the average judgments awarded and paid. The report of the Sutherland Commission showed that these costs greatly lessen the net amount actually received by the injured employee or his survivors.⁴ Settlements out of court may also involve a lawyer's fee.

The great majority of railroad employee cases are settled without recourse to the courts, and the payments made are often less than similar awards under adequate workmen's compensation laws. As a result the railroad accident compensation system takes on many of the aspects of a lottery, from which a few employees draw large sums but from which many receive insufficient awards. It is this inequity which constitutes the greatest indictment of the system and furnishes the most powerful argument in favor of a reasonable federal workmen's compensation law.

⁴"While large judgments are sometimes obtained, the greater proportion of the money paid in satisfaction goes into the pockets of counsel, who exact this compensation in the form of exorbitant contingent fees, and in various other ways is consumed in passing from the treasury of the company to the hands of the employees or their dependents."—Report of the Employers' Liability and Workmen's Compensation Commission, 62d Congress, 2d Session, Senate Document No. 338, Washington, D. C., 1912, Vol I, p. 35.

figures, but coal, grain, ore, and coke showed increases over the week before. The summary, as compiled by the Car Service Division of the Association of American Railroads, follows:

Revenue Freight Car Loading

For Week Ended Saturday, May 11

Districts	1935	1934	1933
Eastern	135,100	141,268	121,004
Allegheny	109,914	122,050	98,944
Pocahontas	37,588	43,241	34,782
Southern	82,605	84,687	82,026
Northwestern	82,551	80,645	67,348
Central Western	82,733	83,747	80,291
Southwestern	44,694	47,160	50,411
Total Western Districts	209,978	211,552	198,050
Total All Roads	575,185	602,798	534,806
Commodities			
Grain and Grain Products	25,906	28,464	39,073
Live Stock	13,802	15,720	17,460
Coal	95,684	103,557	82,355
Coke	5,840	6,690	3,761
Forest Products	24,432	24,986	20,233
Ore	24,801	18,182	6,726
Merchandise L.C.L.	160,328	165,086	164,681
Miscellaneous	224,392	240,113	200,517
May 11	575,185	602,798	534,806
May 4	569,065	605,246	527,118
April 27	558,886	609,704	538,809
April 20	610,905	591,705	496,512
April 13	587,685	579,981	498,182
Cumulative Total, 19 Weeks	10,958,034	11,113,672	9,336,783

Car Loading in Canada

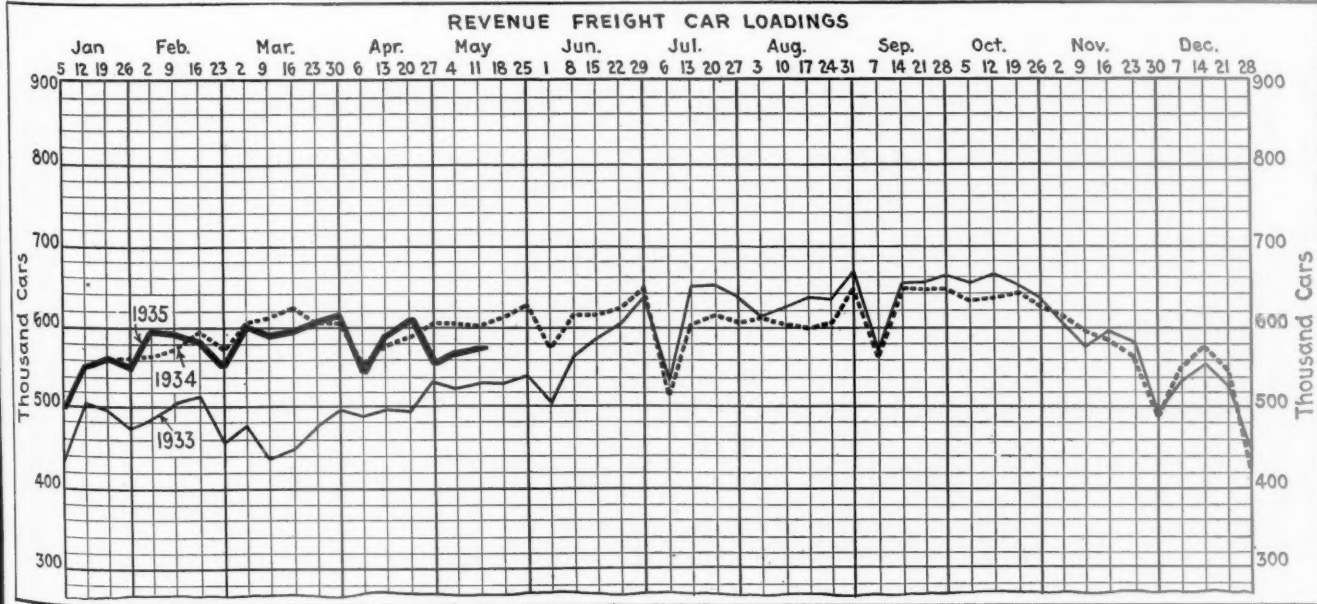
Car loadings in Canada for the week ended May 11 totaled 38,400, as against 43,960 for the corresponding week last year and 43,196 cars for the previous week, according to the compilation of the Dominion Bureau of Statistics. The decline was due to the holiday on May 6, which was set aside for the celebration of the King's Silver Jubilee.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total For Canada:		
May 11, 1935	38,400	21,239
May 4, 1935	43,196	21,780
April 27, 1935	42,194	22,758
May 12, 1934	43,960	23,506
Cumulative Totals for Canada:		
May 11, 1935	806,951	432,865
May 12, 1934	787,520	447,336
May 13, 1933	637,372	328,316

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended May 11 totaled 575,185 cars, an increase of 6,120 cars as compared with the week before but a reduction of 27,613 cars as compared with the corresponding week of last year. This was, however, an increase of 40,379 cars as compared with 1933. Ore was the only commodity classification to show an increase over last year's



Motor Transport Section

Passenger Motor Transport Series

Article No. 1

Cashing In on Buses and Autos

Railways building up passenger motor transport as a rail adjunct in the Far West

AFTER some years during which the development of motor coach and other passenger automobile traffic as a railway adjunct was practically arrested, the railways of the Far West are again expending in this direction this year. Not only have there been a number of new projects started, but new equipment and additional runs are being installed on operations already in existence.

The railways of the Far West have pioneered in the use of co-ordinated motor-rail transportation, the first motor coach line operated under railroad supervision having been that of the Spokane, Portland & Seattle, between Portland, Ore., and Astoria, as a train replacement service. This year when special efforts are being made to popularize rail travel, various motor detours are being offered by the railways as an inducement to prospective travelers. The choice of such detours is rapidly enlarging, so that, in conjunction with a round trip rail ticket, a passenger is offered opportunities to see many scenic features that are not available to strictly rail transportation. While such detours undoubtedly attract travel from one railroad to another, properly advertised and properly exploited detours may be made to serve as potent new-business getters, as sales attractions to people who would not, otherwise, make the trip at all, or who would otherwise use some other agency of transportation than the railway.

This year, particularly, such side trips will be widely

used as means for attracting people to the West by rail. There is a vast latent passenger market in the country today, in the thousands of people who have heretofore gone to Europe yearly, and the other thousands who had been planning to go. The political unrest in Europe, the vastly increased customs and border financial difficulties, and the arbitrary increase of 40 per cent throughout in the cost of European travel, brought about by the fall in the dollar with relation to European currencies, have all had a retarding effect on people who were considering a trip to Europe. Each of these persons is a prospective rail passenger, if properly approached.

See America First

The old slogan: "See America First," is by no means outmoded. It was effective, at least for a time, in the days when it was rather simpler, more comfortable and cheaper for eastern people to go to Europe than it was for them to make the rail trip to the Pacific Coast, and it should be much more effective now that, with the provision of air-conditioned trains and low fares, the Pacific Coast trip far exceeds the European trip in comfort and convenience, and can be made at a much lower cost.

That this potential market exists is no longer open to question. That all of the railway passenger officers realize this is not so apparent. One of them, connected



Motor Transport Provides Convenient Means of Reaching the Scenic Spots of the West from the Railway

with a transcontinental line, dismissed the subject with the remark: "Not worth bothering about. Let the people from the coast go to Europe if they wish. We get the rail haul to the East and back again anyhow." In his reasoning he overlooked the fact that the number of passengers going to Europe from the Pacific Coast is small compared to those who normally go from the thickly populated East, and from among whom the western lines have been getting no passengers. It is among these people that the railways may now find a fruitful, profitable market for travel, and it is a market of new travel that does not require the winning of the passenger from some other railroad or from some competing form of transportation.

The Scenic West

With cost, comfort and convenience now in favor of the railways, the matter of interesting things to see remains the chief competition, and, in this respect, the West is not at a disadvantage in comparison with Europe, particularly with the growing tendency to provide motor transport to points of interest not reached by the rails.

That this is advisable in these days of an automobile-conscious public is indicated by the experience of the Atchison, Topeka & Santa Fe. Despite such an attraction as the Grand Canyon immediately accessible from its rails, the Santa Fe felt it desirable to provide other attractions and has developed the Indian Detours in New Mexico and Arizona, which, through motor transport, open up to the public a vast and interesting area hitherto practically inaccessible, and attract additional traffic to the Santa Fe for the rail haul.

Similar projects that have weathered the depression with varying success are the Southern Pacific's Carlsbad Cavern tours from El Paso, the Apache Trail in Arizona, parlor coach tours in California, and the Redwood Empire tour in northern California and southern Oregon; the Union Pacific Utah Parks and Boulder Dam tours; the Great Northern's Logan Pass detour in Glacier National Park, and a number of scenic bus routes operated by the Denver & Rio Grande Western in localities not reached by rail or where coach service is cheaper and more convenient.

Better arrangements and closer co-ordination with the transportation companies operating in the national parks can also be made to produce additional rail haul passenger business. Such arrangements are usually of long standing, but are not to be regarded as static and fixed. Almost without exception, the parks transportation companies are modernizing their equipment, and

offer attractive tours in connection with round-trip rail tickets.

Service Expanded

Nearly all these enterprises are marked by increased attention and expansion for the season just starting, but that is only one phase of rail-bus co-ordination. The Union Pacific, for example, provides what amounts to practically a coach pick-up and delivery service of passengers in metropolitan Los Angeles by means of its train connection buses, most of which are also train replacements. At the same time, other train replacement coaches are being operated in many localities, largely for branch line service, notably on the Southern Pacific, the Northwestern Pacific and the Spokane, Portland & Seattle.

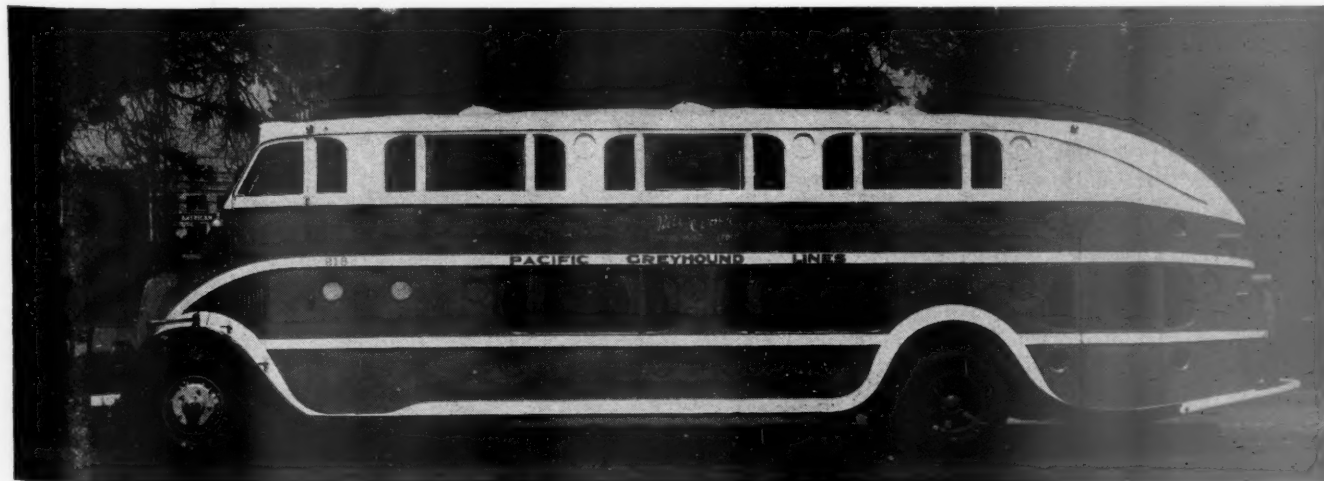
In the through bus service, too, great strides have been made in the West this year. The Burlington Transportation Company has extended its operations from Chicago to the Pacific Coast, while the Interstate Transit Lines, U. P. and C. & N. W. bus-operating subsidiary, has shortened its transcontinental schedules and installed the latest types of equipment. Three railroads are combining in the operation of a new bus line between Denver, Colo., and Salt Lake City, Utah, over a new, direct and scenic highway. In general, the railways' motor coach-operating subsidiaries are expanding and branching out greatly this year, after practically marking time in the majority of cases over a period of three or four years.

It is proposed, in the series of articles that is to follow in succeeding issues of the Motor Transport Section, to describe the existing services in the West and trace their expansion. The series will include, also, articles on the national parks transportation systems and their relations and co-ordination with the railways to the benefit of both.

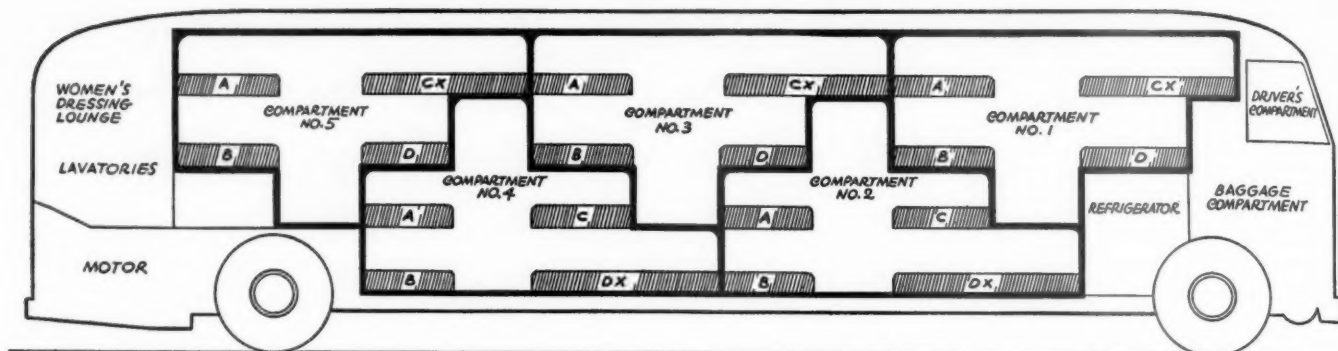
Pacific Greyhound Adds to Sleeper Services

SINCE June, 1929, the Pacific Greyhound has been operating "nitecoaches" successfully between Los Angeles and San Francisco, the oldest continuous nitecoach route in the country. The first nitecoach to be built was operated on this run.

Feeling that nitecoaches had thus proved their worth,



Exterior of Nitecoach Operated by Pacific Greyhound



Plan Showing Arrangement of Berths, De Luxe Nitecoach A, B, C and D, Single Berths; CX and DX, Double Berths

the Pacific Greyhound Lines, in which the Southern Pacific has a third interest, inaugurated sleeper bus service between Los Angeles and Kansas City, on May 1, the first run of this character that might be termed trans-continental. At the same time, the schedule between the two points has been reduced to 52 hr., a reduction of approximately six hours from previous schedules. The running time of the standard coaches operating between these points has also been reduced to 55 hr. The fare remains the same, \$24, with a single lower costing \$5 and a double lower \$7.

Each coach has accommodations for 25 passengers and is operated by a crew consisting of a driver and a porter. It is equipped with men's and women's lavatories and toilets, and each compartment has a washstand with a mirror and running water. For day riding, the interior is converted into five compartments, each with deep-cushioned lounge-type seats, radio and a portable table.

The route followed is via Salina, Kan., Hutchinson and Dodge City, Trinidad, Colo., Albuquerque, N. M., Flagstaff, Ariz., and Prescott, Indio, Calif., and Ontario.

of the service, however, relatively few shippers have taken advantage of this option, 82.5 per cent of the stock being hauled to the railway by the contract trucks employed by the railway for that purpose.

Before initiating the service, the Illinois Central secured the approval of the Interstate Commerce Commission. In addition, other railways serving adjacent territories were notified and have since been kept fully advised as to the results of the experiment. The opera-

Live Stock Traffic Regained

FACED with a steadily declining livestock traffic, the Illinois Central initiated an experiment in livestock pick-up on December 20, 1934, that has proved highly successful. Between that date and April 23, 1935, the number of carloads of stock handled in the experimental territory increased 17 per cent. The traffic increase was, however, approximately 33 per cent, since 125 more double-decked cars were used during the period mentioned than in the corresponding period in 1933-34. This compares with a decrease of 6.9 per cent in livestock handled during this period on the system as a whole. The revenue, after the payment of the pick-up allowance had been made, was 4.8 per cent above that of the preceding year. These increases were achieved in spite of the fact that the amount of livestock in the territory has been much less than in the preceding year because of the feed shortage and the AAA program.

The new arrangement provides for the pick-up of livestock in any quantity for consolidation into carloads destined to the Chicago stockyards. This pick-up service is available at all stations from Manchester, Iowa, 229 miles west of Chicago on the Chicago-Omaha line of the Illinois Central, east to Chicago. The regular carload rates are charged, the cost of the pick-up service being absorbed by the railway, while if a farmer elects to bring his stock to the railway himself, an allowance of 3 cents per 100 lb. is made to him. Since the inception



Loading Hogs Brought In by the Pick-Up Trucks

tion was not designed to take traffic from other railways, but rather to meet highway competition. With this in mind, the service was made applicable only within 10 miles of stations served by the Illinois Central.

Consolidation Plan

The consolidation into carloads at the various stations is handled by representatives of the former livestock associations, which, since the advent of handling livestock by trucks, have been inactive, but are now again serving a useful purpose. There are not, of course, carload lots available for shipment from every station every day. Before the arrangement was put into effect, however, meetings were held between the livestock shippers and railroad representatives, where the plan was explained and co-operation requested. In view of the

(Continued on page 827)

Motor Transport Discussions in 1934 Railroad Reports

Some earnings figures of subsidiaries included among usual expressions of satisfaction with results from highway operations

RAILWAY executives, in annual reports for 1934, followed their usual course with respect to comment on their companies' motor transport operations and thus, generally speaking, confined their remarks on that subject to brief general expressions of their satisfaction with results achieved from these ventures into the highway field. Here and there, however, as in reports of previous years, are found more extended discussions, as well as separate financial statements for truck and bus subsidiaries and affiliates.

Last year was, of course, a notable one in the field of co-ordinated rail-highway freight services, for it was in December, 1933, that several large roads inaugurated system-wide pick-up and delivery for l.c.l.; and, as was pointed out in the *Railway Age* Annual Statistical Number of January 26, "during 1934 hardly a week passed without the announcement of additional service in this respect." It is significant to note in this connection that executives of some of the larger roads which installed the c. & d. as an experiment have, in their annual reports, called it a success, and hailed it as a permanent feature of their services.

Excerpts from these motor transport discussions in some of the 1934 railroad reports are given herein.

Southern Pacific and Cotton Belt

As has been the case in past years, the most extended comment on motor transport is presented by Hale Holden, chairman of the Southern Pacific. His 1934 report's discussion of S. P. highway affiliates follows:

PACIFIC GREYHOUND CORPN. AND SOUTHWESTERN GREYHOUND LINES, INC.

The Southern Pacific Co., owns 39.05 per cent of the common and 22.78 per cent of the preferred stock of Pacific Greyhound Corp., which solely controls subsidiaries operating most of the important motor bus lines in the territory south of Portland, Ore.; and west of El Paso, Texas; Albuquerque, N. M.; and Salt Lake City, Utah. Operations of these motor coach lines during the year 1934 extended over an average of 7,692 route miles, motor coaches having traveled 22,462,843 miles and carried 4,232,456 passengers. Total gross revenues were \$5,959,428, operating expenses were \$3,391,793, taxes \$515,475, and depreciation and retirements amounted to \$616,072; leaving a net operating profit of \$1,436,088. Net income after all charges amounted to \$1,300,033, an increase of \$784,745, or 152.29 per cent, over 1933.

Southwestern Greyhound Lines, Inc., in which your company and St. Louis Southwestern each owns one-sixth voting interest, and together own 11.3 per cent of other outstanding capital stock, on December 31, 1934, completed its first calendar year of operations between Albuquerque, N. M., and El Paso, Texas, on the west; and St. Louis, Mo., and Memphis, Tenn., on the east. Operations extended over an average of 5,517 route miles; motor coaches traveled 14,480,853 miles and carried 1,687,965 passengers. Gross revenues were \$3,556,943, operating expenses \$2,673,035, taxes \$362,071, depreciation and retirements \$147,435; and the net income, after all charges, was \$379,850.

STORE-DOOR PICK-UP AND DELIVERY FREIGHT SERVICE AND MOTOR TRUCK SERVICE ON HIGHWAYS

Your Company's solely controlled affiliated companies which provide city pick-up and delivery service in connection with intrastate rail freight movements and operate motor truck service

on highways, further extended this service during the year, and carried an increased volume of traffic with consequent increase in revenues, as compared with last year. The service provided by these companies competes with that of motor truck carriers, feeds traffic to your Lines, and has made possible the substitution of motor truck service for local rail freight service in a number of localities, with resultant economy to your Company.

Extension of the operations of Pacific Motor Trucking Co., and Southern Pacific Transport Co., of Louisiana, during the year, enabled your rail lines and these affiliated truck lines to secure the haul of a substantial volume of materials and supplies from points of origin to the sites of construction projects located 5 to 125 miles from the railroad; in competition with other motor truck lines, or steamships and motor trucks via the nearest port.

The total charges to the public for services performed by Pacific Motor Transport Co., operating in Oregon, California, Nevada, and Arizona; Southern Pacific Transport Co., operating in Texas; and Southern Pacific Transport Co., of Louisiana; were \$4,068,484, an increase of \$711,927, or 21.21 per cent, compared with 1933. Of the total contract payments made by these companies to rail carriers, for 1934, your company and its separately operated solely controlled affiliated companies received \$2,803,104, an increase of \$738,704, or 35.78 per cent.

Operating revenues of the Pacific Motor Trucking Co., which commenced operations July 1, 1933, were \$291,923 for the year 1934. For the six months' period of its operations in 1933 its operating revenues were \$106,236.

Later in his discussion of "Motor Truck Competition," Mr. Holden notes that there was no lessening of it during 1934 despite increased costs resulting from the adoption of truck codes. Here he refers again to the operations of the S. P. transport companies and to other efforts to meet the situation, adding, however, that "there is a limit to the ability of the railroads to overcome, by rate adjustments and improvement of rail service, the unequal conditions of competition with motor truck carriers which now prevail due to the lack of regulation of interstate trucking operations and inadequate regulation of intrastate trucking operations in many states."

The Southwestern Transportation Co.'s income account, included separately in the report of its parent railroad, the St. Louis Southwestern, shows 1934 gross revenues of \$542,939, operating expenses of \$509,919 and net revenue from operations of \$33,020. After total deductions of \$29,603 for taxes and uncollectible revenues, there remained an operating income of \$3,416. Adjustments of the latter figure, including, among other minor items, an addition of \$4,765 for dividend income, resulted in a 1934 net income of \$8,436. In a brief reference to the transportation company, President Daniel Upthegrove reveals that in 1934 it handled 18,830 tons of merchandise freight and, at the close of last year, it had equipment consisting of 81 motor trucks and four motor buses, the latter being held for conversion to freight-carrying vehicles. In addition, the report reveals, the Cotton Belt owns \$95,300 preferred stock and \$80,000 common stock class A and \$80,000 common stock class B of the Southwestern Greyhound Lines, Inc.

Union Pacific and D. & R. G. W.

Carl R. Gray, president of the Union Pacific, makes no comment on that road's highway operations, but the

U. P. report sets up condensed balance sheets and income accounts for the Union Pacific Stages, Inc., and the Interstate Transit Lines. The former reported for the year ending December 31, 1934, gross revenues of \$1,097,019 which, after operating expenses of \$799,708 and other deductions, produced a balance of \$147,332 for transfer to surplus. This net profit was then written out of the Union Pacific Stages accounts and, according to a footnote, "absorbed by one or more system companies." Thus the U. P. Stages surplus account remains the same as at the close of 1933, i. e., with a debit balance of \$116,426. The U. P. Stages balance sheet as of December 31, 1934, lists total assets of \$1,551,923, including property investment of \$1,300,635.

The income account of the Interstate Transit Lines, in which the Union Pacific's stock-interest is 70.9 per cent, reveals that, in 1934, gross revenue for this subsidiary was \$3,505,313; operating expenses were \$2,474,964 and net revenue from operations \$1,030,349. After adjustments for other income, taxes and other deductions there remained a "balance transferred to surplus" of \$585,268. Dividends paid last year amounted to \$527,658, after which a credit balance of \$368,838 remained in the surplus account as compared with a figure of \$314,641 on December 31, 1933. Total assets of the Interstate Transit Lines at the close of last year amounted to \$5,752,402, including a property investment of \$3,505,313.

Highway operations of Denver & Rio Grande Western affiliates were profitable last year, according to a brief resume included in the report of President J. S. Pyeatt. The Rio Grande Motor Way, Inc., earned a 1934 gross revenue of \$233,852 and a net income of \$10,578; the Denver-Colorado Springs-Pueblo Motor Way, Inc., reported gross revenues of \$146,834 and net income of \$23,706. The D. & R. G. W. owns 1,300 shares, par value \$130,000, or 80 per cent of the outstanding stock of the former and 42,000 shares, par value \$42,000, or 50 per cent of the latter. The stock of both of these companies is pledged with the Reconstruction Finance Corporation as collateral under various loans.

North Western, Burlington and Soo Line

Fred W. Sargent, president of the Chicago & North Western, refers to Co-ordinator Eastman's "recommendations for improved methods of handling less carload freight," recalling in that connection that the C. & N. W. "has been active for several years in pressing for such an arrangement through the facilities of the Railway Express Agency. . . . The project is still actively before us and promises early and favorable developments." At the same time, Mr. Sargent adds, the North Western "is advancing as fast as possible in its program for extending pick-up and delivery service in connection with all less carload freight. This program moves rather slowly, however, because of the many interests involved."

In a paragraph headed "Burlington Transportation Co.," President Ralph Budd, in the Chicago, Burlington & Quincy annual report, says: "Bus transportation has been developing quite rapidly of recent years and an effort is being made by Burlington to participate appropriately in such business. During the last half of 1934 the Burlington Transportation Co. inaugurated through bus service from Chicago to Omaha and from Chicago to Denver. This development from a strictly local operation which offered substitute service where railway passenger trains could be removed, to a more independent unit of transportation, conforms with the trend in transportation. The Burlington Transportation Co. in

1934 showed an operating loss of \$58,347, compared with a loss of \$38,918 in 1933. The increase in the loss was for the most part due to the expansion of service above referred to. It should be said that the annual savings to the Burlington Railroad by eliminating passenger trains are estimated at \$175,000."

In commenting on I.c.l., President C. T. Jaffray of the Minneapolis, St. Paul & Sault Ste. Marie notes that "trucks and forwarding companies continue to make large inroads on this class of traffic," and adds that "final consideration is now being given to substantial reductions in merchandise rates, as well as the desirability of offering store-door pick-up and delivery service on a new basis."

Pennsylvania and Erie

The Pennsylvania, one of the larger roads to install I.c.l. store-door service experimentally in December, 1933, says in its 1934 report that pick-up and delivery's "successful operation and the resulting increased patronage have made it a permanent feature of the services." Former President Atterbury, who also characterized c. & d. as "a forward step in keeping with modern trends in business and in co-ordinating rail and highway transport in a form best calculated to serve the public interest," added an expression of his belief that "its full advantages and economies to the public and the railroads will not be realized until it is adopted generally on all railroads."

Likewise C. E. Denney, president of the Erie, which joined the Pennsylvania in the December, 1933, c. & d. experiment, says that "this service has been helpful in obtaining additional less-than-carload traffic and retaining some of such traffic which otherwise would have been lost. Your companies' revenue from the transportation of less-than-carload freight in the year 1934 was \$5,187,894, compared with \$5,073,657 for the year 1933."

Reading

Motor coach routes operated by the Reading Transportation Co. decreased by 214 miles in 1934, while truck routes increased by 80.9 miles, according to the parent railroad's annual report. President Charles H. Ewing points out that the reduction in bus-route miles from a total of 931 as of December 31, 1933, to 717 as of the close of last year was due mainly to the assignment of routes to the Pennsylvania-Reading Motor Lines, Inc., the subsidiary of the Pennsylvania-Reading Seashore Lines, which latter was formed to consolidate the South Jersey rail lines formerly operated by the Reading and the Pennsylvania. Involved also, however, was the abandonment by the Reading Transportation Co. of three routes totaling 72 miles. Reading Transportation Co. truck routes as of the close of last year totaled 1,028.9 miles, the above-mentioned 80.9-mile increase over the previous year being due to the inauguration of service on two new routes between Philadelphia, Pa., and Yardley and between Collegeville and Allentown. It also operates trucks within a 25-mile radius of Philadelphia, Reading and Lebanon, but over no fixed routes and with no fixed schedules. Equipment in service at the close of last year included 48 buses, 24 trucks, 13 tractors and 17 semi-trailers, the only change from December 31, 1933, being the drop in the number of motor coaches from 71.

New York, New Haven & Hartford

The report of the New York, New Haven & Hartford includes the balance sheet and income account of its highway subsidiary, the New England Transportation Co. The New England reported for 1934 a net

deficit of \$165,435, as compared with a 1933 net income of \$31,251. This, despite an increase in gross revenues, because, as President H. S. Palmer points out, "higher material and wage costs increased expenses more than the increase in revenues." The increase in N. E. T. gross revenues as compared with 1933 was from \$3,186,086 to \$3,481,419, or a rise of \$295,333; this latter reflected an increase of \$309,649 and \$17,940, respectively, in passenger and "other" revenues and a drop of \$32,256 in freight revenues. Operating expenses for 1934 were \$482,623 greater than in 1933 and thus the year's net operating revenue of \$250,439 was insufficient by \$14,307 to absorb even the 1934 tax accruals of \$264,746; this tax figure was \$15,091 greater than in 1933. Other income of \$6,013 reduced the deficit at the "gross income" stage to \$8,294, but deductions from gross income, amounting to \$157,141, a decrease of \$4,606 from the 1933 deductions, produced the above-mentioned 1934 deficit of \$165,435.

The N. E. T. balance sheet as of December 31, 1934, lists total assets of \$5,927,819, an increase of \$153,675 as compared with 1933. The New Haven's investment in the New England as of the close of last year totaled \$2,818,500, including \$1,500,000 of the subsidiary's capital stock and \$1,318,500 of its notes.

Boston & Maine and Maine Central

The pick-up and delivery service introduced by the Boston & Maine in 1932, says President E. S. French, "continues to show good results, and your management feels that its inauguration as a component part of a completely co-ordinated railroad freight service has been fully justified in this territory. Up to date it has proved effective in halting the increasingly serious loss of freight from the rails to the highways." Mr. French also refers to the complaint against B. & M. pick-up and delivery service which the Motor Truck Club of Massachusetts made to the Interstate Commerce Commission in the latter part of 1933. He told in this connection how the I. C. C. in a decision of December 11, 1934 (see *Railway Age* of December 22, 1934, page 839) had found that "not only was the service being properly conducted by the railroad, but that it should be encouraged"—a decision which came "after a hearing at which the railroad's position was endorsed by such organizations as the Boston Chamber of Commerce and the Associated Industries of Massachusetts."

Of the Boston & Maine Transportation Co., President French reported that this B. & M. subsidiary's operations for 1934 showed a profit of \$510, "besides which there were advantages to the railroad through economies resulting from substitutions of buses and trucks for unprofitable rail services." Bus revenues, he added, "showed a substantial increase over recent years," while "Transportation Company freight, and freight trucked for the railroad, both were greater in volume than in the previous year." The B. & M. report for 1933 showed a net profit of \$6,956 for the B. & M. T. in that year.

In the Maine Central's 1934 report, Mr. French, who is also president of that road, refers briefly to the operations of Maine Central Transportation Co. There was no change last year in the highway routes which this company operates, he says, adding that "results were very satisfactory and \$72,219 was contributed to Maine Central Railroad Co. income, an increase of \$15,219 over the previous year."

KUMAN UCHIYAMA has been appointed resident representative in the New York office of the Japanese Government Railways. He succeeds Hajime Sato, who is returning to Japan to assume new duties there.

Live Stock Traffic Regained

(Continued from page 824)

excellence of the new service and its convenience to the shippers, full co-operation from them has been the rule rather than the exception.

The railway contracts with local truckers for the trucking involved in the pick-up service, one of the purposes of the experiment being the stimulation of local enterprise. Not the least of the benefits gained by the railway is the fact that each carload of livestock handled in this manner means one less truck going to Chicago, to return with merchandise freight handled at any price, however low, to avoid an empty backhaul.

Successful Experiment

Specialized solicitation of this traffic has been made by the regular solicitation forces of the railway. Local agents and traveling freight agents keep close watch on the livestock available for shipment and contact the farmers when the approximate shipping date arrives.

The experiment has been so successful in the limited territory where it has been effective that the Illinois Central now has plans under consideration for expansion of the service. In addition, three other roads in this territory have issued tariffs covering similar operations on their lines, the tariffs of the Chicago, Burlington & Quincy and the Chicago & North Western having been made effective on May 6, and of the Chicago, Milwaukee, St. Paul & Pacific on May 11.

Odds and Ends . . .

Good Advertising

The prize for unique 1935 auto licenses goes to C. A. Cohagan, gang leader for the Norfolk & Western at Columbus, Ohio. His license this year is N. 8. W., which from a distance, looks like N. & W.

Statistics

The value of statistics for railways is immeasurable. For example, a German accountant, with typical thoroughness, has figured out that, in 1934, German passenger trains piled up a mileage equal to 624.81 round trips to the moon.

Punctuality

J. H. Ries and G. W. Waltz, clerks in the office of the auditor of freight traffic of the Baltimore & Ohio, have set a remarkable on-time record. Ries has not arrived late for work since September 1, 1891, while Waltz's record dates back to January 18, 1892.

Female A. G. F. A.

There have been one or two women railway presidents, but, so far as the freight traffic department is concerned, Miss E. J. Raymond claims to have advanced to the highest position ever held by her sex. She was recently appointed assistant general freight agent in charge of solicitation for the Green Bay & Western, with offices in Chicago.

A Record?

Frederick Clark, baggageman for the Pere Marquette at Detroit, has been employed successively by the Michigan Central, the Erie and the P. M. for 44 years steadily, and yet he has never done a day's work in all that time. The explanation is not that Clark is a loafer. It simply happened that his entire 44 years' service has been on night jobs, and he hasn't ever worked for so much as a single day.

Communications . . .

Rejuvenation of Steam Traction

NEW YORK CITY

TO THE EDITOR:

Recent activity in modernizing steam traction is indeed highly gratifying; it is of course reflected in detail by the reports contained in your publication and in the railroad press in general, but numerous notices appeared and editorial comment has been evoked in the daily newspapers, the importance of which should not be underestimated. For several years past, public opinion has slowly been penetrated by the idea that in this age of electricity and the automobile, the steam locomotive is continuing to exist mainly by virtue of conservatism, soon to be doomed by the natural course of events.

Certainly, well informed engineers knew better; but the well-informed are not numerous, and for an engineer interested in steam locomotives (and especially for a younger one) it is certainly not encouraging to know that he can hardly mention his specialty without hearing the mildly pitying query: "Don't you think that the steam locomotive will soon disappear?" Indeed, the writer, while having graduated as an electrical engineer and being by no means interested in steam locomotives alone, but giving them the honor they deserve, had to prepare certain standard speeches to counteract these queries in keeping with the education and temperament of the questioner.

It is unhealthy if engineering talent in general is thus repulsed and discouraged from devoting itself to a field which will for a long time offer great potential opportunities. True, steam locomotive designers, when compared with designers of electric or internal combustion motive power, have the "advantage" of being able to blindly copy from predecessors and perhaps this encourages the less able and the unprogressive. But to conceive and introduce worthwhile improvements is far more difficult in the hundred-year old art of steam locomotive design than in the younger forms of motive power. The very best talents need not be ashamed of devoting themselves to steam traction. Wide publicity to progress in this line will educate the public and lift the stigma still attached to it.

A. GIESL-GIESLINGEN.

Make the "News Butcher" a Salesman

NEW YORK CITY

TO THE EDITOR:

For a long time I have thought that retail selling on trains is not all that it could or should be and as I have recently completed a trip to the coast and return, mostly by coach, some of my observations on the subject might interest you. My business experience has made me familiar with modern merchandising.

I realize that there are certain limitations peculiar to selling in coaches en route but there is also one important advantage, that is: monopoly of a potentially good market. Nevertheless, with this advantage we find the train salesman bringing his wares to the customer where, in even some of the most competitive store-keeping, we find the customer gladly going to the merchant.

Apparently the train salesman, despite the advance of railroading, the arts, science and the human race, has remained the same as he was when railroads and traveling by them were difficult and dangerous adventures. He, in the eyes of the average traveler of today is nothing less than a racketeer who, within his protected territory, exacts an unreasonable toll from those unfortunate enough to be in need of any of his wares.

Train salesmen seem to fall into any one of three pretty well defined types. He might be the talkative super-salesman continuously hawking one item or another, finding here or there a timid soul who buys from sheer fright. Or, perhaps, he is a comedian, that is, in his own opinion anyway, who relies on banal chatter for what he can get. Then there is the tired, sad-eyed type who picks out likely looking passengers, sits down beside them, talks, and lets the law of supply and demand take care of his business. A competitive store would not tolerate any one of these types.

Regarding the merchandise offered on trains—coffee at ten cents is fair enough but there is at least one road that sells it

for five cents and probably does very well with it. Sandwiches at fifteen cents are too expensive for their average quality as well as for the feelings and appetites of coach travelers. Cigarettes should not be over the local prices and five cent cigars at five cents should and would be sold. Newspapers at five cents are not objected to. Well known five-cent candies should be carried to the exclusion of all others. Post-cards and views certainly should be cheaper than they are. Most of the souvenirs shown on Western trains are relics of an era now happily past and they should be replaced by current items.

Usually a train salesman takes up two full seats for his stock and in some cases an attempt is made at a store-like display. It seems that an effective, easily portable display apparatus might be a decided improvement, easily accomplished.

In conclusion, all that train merchandising needs, in my opinion, is better merchandise, fairer prices and employees trained to sell their goods rather than their personalities. While this may seem a rather large order I believe that the profits from this really important phase of passenger business would increase materially and good-will immeasurably.

JOHN C. KERBY.

The Need for Cheaper Fares for Family Groups

AMHERST, MASS.

TO THE EDITOR:

It is usually conceded that the loss in passenger traffic on through trains has been due to the competition of the automobile. The only way for the railways to win back a part of this traffic is for the roads to furnish a service which will meet automobile competition.

An analysis of the situation leads one to arrive at the following conclusions as the reason for the loss of passenger traffic to automobiles:

1. The relatively high cost of carrying a family by rail over the cost of the automobile.
2. The greater flexibility in the route which may be taken by automobile.
3. The glamour of automobile travel.

My family consists of two adults and two children, age nine and four. If I should travel by train, it would cost me 9 cents per mile. In a few years, a rail trip will cost me over 12 cents at present rates. One does not have to be a financial expert to see that such charges keep away about 90 per cent of the potential rail traffic. When I can move my family by car at 4 cents per mile, the rail service is out of the picture. This is true, even though I realize that automobile travel is more hazardous, tiring, uncomfortable, and dirty, as compared to the train. I can also save money on food and lodging when traveling by automobile.

In order to provide a service which would lower family costs, the railroads could sell a 5,000 or a 10,000 passenger mile book for the transportation of family groups. A 5,000 mile book should sell for \$75 or \$100, and a 10,000 mile book for \$125 or \$150. Any higher price than this maximum would attract very little traffic. The minimum charge per family would be three adult fares, and the books would be limited to a period of six months. These books should be sold by the Association of American Railroads and should be good on any railroad or railroad subsidiary bus line in the United States. This feature would give the route flexibility to which autoists are now accustomed. It would not be necessary for these tickets to be good for the most luxurious trains.

The interest which has been shown in the exhibits of the Royal Scot and the streamline trains throughout the country is evidence that the railroads have far more glamour to the youngster of today than the automobile. If the railroads by the above method could take a part of the families off the highways and put them back on trains, the income of the railroads would increase and the value of the service in the prevention of the loss of life and suffering from injury due to highway accidents would be inestimable.

ADRIAN H. LINDSEY,

Professor of Economics, Massachusetts State College.

NEWS

Waterways Provided For in Work-Relief Program

Fund affords short-cut method for proceeding with expensive and controversial projects

A short-cut method for proceeding with expensive and controversial projects for the improvement of inland waterways without awaiting specific Congressional authorization and appropriations having been afforded by the President's \$4,000,000 work-relief program, the Advisory Committee on Allotments for the Works Program on May 16 recommended to the President the allotment of over \$100,000,000 for river and harbor projects, including some of those which have been most vigorously opposed by the railroads at hearings before Congressional committees and Army engineers. These allotments include \$25,000,000 for the upper Mississippi river, \$11,684,000 for the Missouri river, \$15,000,000 for the Fort Peck reservoir, \$5,107,000 for the Chesapeake & Delaware Canal, \$5,000,000 for the Beaver and Mahoning river project, and \$5,000,000 for the Great Lakes to Hudson river waterway.

The \$25,000,000 for the upper Mississippi river is to provide a 9-foot slack-water channel between the Missouri river and Minneapolis by completion of dams where locks are now under construction. The amount previously allotted or appropriated for this project is \$64,000,000 and the additional amount required for completion is estimated at \$37,000,000; total, \$150,066,000. Another \$1,000,000 is proposed for the Mississippi river between the Ohio and the Missouri rivers.

For the Missouri river between Kansas City, Mo., and Sioux City, Ia., \$10,000,000 was recommended for construction of dikes and revetments. Previous allotments and appropriations have amounted to \$43,000,000 and the amount required to complete is estimated at \$13,000,000; total, \$77,000,000. For the Missouri from the mouth to Kansas City \$1,684,000 is recommended for construction of dikes and bank revetments, in addition to \$64,266,000 previously allotted or appropriated and \$3,050,000 estimated for completion; total, \$69,000,000. The reservoir is said to be necessary for regulation of the flow of the river and to provide for 8 to 9 foot navigation below Sioux City. The amount previously allotted or appropriated is \$50,000,000 and it is estimated that \$16,000,000 more will be required for completion; total, \$86,000,000.

For the Kanawha river, lock and dam

construction between Gallipolis and Winfield, \$5,508,000 is proposed. Another \$5,000,000 is proposed for dredging and construction of locks and dams on the Youngstown and Beaver project on the Beaver and Mahoning rivers, while it is estimated that an additional \$32,000,000 will be required to complete it. The \$5,000,000 for the Great Lakes to Hudson river waterway is proposed as a beginning on the enlargement of the present state barge canal from Oswego to the Hudson river and it is estimated that \$22,000,000 more will be required to complete it. Another \$2,000,000 is proposed for dredging the New York and New Jersey canal channels.

Emergency Charge on Canned Goods

Western and eastern carriers at a joint meeting at Chicago have agreed to remove the emergency charge on canned goods moving from western trunk line territory to eastern territory.

U. P. Streamliner to Be Placed in Service on June 6

The streamliner, City of Portland, of the Union Pacific will be placed in regular service on June 6 on a schedule of 39 hr. 45 min. between Portland, Oregon, and Chicago.

Public Invited to Visit Roundhouses

The western railways are extending an invitation to the public to visit railway roundhouses, shops and other plants during the week of June 10-15, so that they may become better acquainted with railroad operation. This is a feature of Western Railroad Week, during which the railroads will celebrate the seventieth anniversary of railway progress in the west. As part of the plan, governors and mayors throughout a wide part of the nation have been enlisted to proclaim the week from June 10-15 as Western Railroad Week.

Lake-Rail Rate Case Re-opened

On petition of the Duluth Chamber of Commerce the Interstate Commerce Commission has re-opened the lake and rail class and commodity rate case for reargument and reconsideration on questions of the disruption of parity in the westbound rates, lake-rail, from eastern defined territory to Duluth as compared with rates from the same points to Chicago, and the failure to require respondents to publish rates between certain territory and Duluth over lake-rail routes. Pending reconsideration the order of January 7, to become effective July 20, will remain in full force and effect. Reargument will be heard by the commission on June 26 at Washington.

Cotton Rate Structure Generally Not Unlawful

I. C. C. so finds in report following comprehensive investigation on its own motion

The railroad cotton rate structure applying on shipments to and from the Southwest, which has been the subject of radical revision and experimentation in recent years in the efforts of the railroads to meet unregulated competition, was found not unlawful, with certain minor exceptions, in a report made public by the Interstate Commerce Commission on May 21 following a comprehensive investigation instituted on the commission's own motion. The report, by Commissioner Miller, from which Commissioners Porter and Lee dissented in part, found that the cotton rate adjustment had been "in an extreme state of turmoil during the past several years, due primarily to intense competition between the rail carriers and unregulated transportation agencies, such as trucks or barges or coastwise vessels, or combinations of two or more of such agencies." The conclusions include the following:

That failure of respondent carriers to publish carload rates on cotton, of a character different from those at present in effect, is not shown to be unlawful.

That the present, so-called, carload rate systems, which partake largely of the nature of any-quantity adjustments, are not unlawful.

That none of the carload rates considered is shown to be unreasonably high, or so low as not to be reasonably compensatory.

That the various carload minima are not shown to be unlawful.

That the relations or spreads between the rates provided for alternative application in connection with the various carload minima are not shown to be unlawful.

That rules governing the assembling of less-than-carload shipments into carloads, as a whole, are not shown to be unlawful, but that the requirement by certain carriers, under the so-called deferred-shipment rule, that a charge of 3 cents shall be made for stopping a shipment in transit and that a minimum of 15 bales shall be covered by one bill of lading, while no similar charge or limitation is made in connection with the so-called pool-car rule, is, and for the future will be, unduly prejudicial to traffic and the shippers thereof under the former rule, and unduly preferred.

(Continued on page 834)

Railway Finance Inquiry Ordered by the Senate

Wheeler resolution is adopted with amendments which restrict scope of investigation

Senator Wheeler's resolution proposing an investigation of railroad financing by the Senate committee on interstate commerce with the assistance of the federal co-ordinator of transportation, the Interstate Commerce Commission, and other agencies of the government, at a cost of \$25,000, was passed by the Senate on May 20 without opposition after the scope of the inquiry had been considerably restricted by amendments to the resolution insisted upon by the committee to audit and control the contingent expenses of the Senate. This committee, to which the resolution was referred after it had been reported by the committee on interstate commerce, because it provided for an appropriation, had held it up for several weeks and had called before it Co-ordinator Eastman and Chairman Kennedy of the Securities and Exchange Commission before reporting it.

As originally introduced, the resolution was very sweeping in its scope and would have authorized the committee to dig into the affairs of any railroad, but the amendments adopted before it was finally passed omit such general language as "corporate management and control," "receiverships and bankruptcies," "management, service, equipment and supply contracts and arrangements," etc., and authorize the member of the Interstate Commerce Commission heretofore designated by the President as federal co-ordinator of transportation to select the railroads to be included in the investigation. It is understood that the hearings to be held under the resolution will be postponed until Fall, although a preliminary hearing was held before the committee before it reported the resolution at which charges were made relating to "banker control," particularly in connection with the Missouri Pacific and St. Louis-San Francisco. The resolution now reads as follows:

"Resolved, That the Committee on Interstate Commerce, or any duly authorized subcommittee thereof, is authorized and directed to make, and to report to the Senate the results of, a thorough and complete investigation of the financing, reorganizations, mergers, acquisitions and dispositions, insolvency, credit, securities operations and activities, financial policies, and intercorporate relationships—in respect of interstate railroads, railroad holding companies, railroad affiliates, and subsidiaries—any corporation or person which is or has been affiliated with any of the foregoing, banking, legal, engineering, accounting, and other professional corporations, persons, or groups occupying a fiduciary or contractual position or relation with any of the foregoing, and any member of the family of any such person, and any officer, agent, or director of any such corporation or group.

"The Committee on Interstate Commerce, or any duly authorized subcommit-

Railroads Only or Complete Transportation Service?

The Boston & Maine and the Maine Central Railroads are distributing time-tables which do something more than make it possible for the patient and persistent to find out when trains arrive and leave. They offer complete transportation service throughout New England by railroad, airplane, or bus. Other railroad companies have made some progress in this direction, but the fact still remains that most railroads insist upon being railroads and not transportation companies. It seems inevitable that the aggregate of passenger and freight haul by highway will continue to increase. There seems no logical reason why the two systems of transportation should not complement each other. Railroads should be better equipped than anyone else to operate trucks and buses profitably.

From "Business Week"

tee thereof, is authorized and directed to obtain such facts as the Federal Co-ordinator of Transportation, the Interstate Commerce Commission, and other Government agencies may have, and to secure the assistance of the Federal Co-ordinator of Transportation, the Interstate Commerce Commission, and other Government agencies in the investigation hereby authorized. The member of the Interstate Commerce Commission, heretofore designated by the President as Federal Co-ordinator of Transportation under the Emergency Railroad Transportation Act, 1933, is hereby authorized and directed to select the railroads to be included in the investigation."

In placing the resolution before the Senate, Senator Wheeler said that the commission, as a matter of fact, will do practically all the work, but that it was necessary to have the resolution in order to reach some of the railroads' affiliates and holding companies and that "the testimony taken before the committee relative to railroad reorganizations and receiverships shows that there has really been a scandalous situation in the case of two or three of the railroads, particularly the Frisco system, the Van Sweringen system, and some of the others."

Superintendents' Convention

The American Association of Railroad Superintendents will hold its forty-first annual convention at the Hotel Sherman, Chicago, on June 18-20. In addition to the reports of six committees, arrangements are being made for several authorities in transportation practices to address the meeting. The program will be thoroughly business-like in character, devoid of entertainment. The annual banquet will be dispensed with and in place thereof a luncheon will be held on Wednesday noon at which a leading railway executive will speak on transportation problems of the day.

Railroad Labor Leaders Urge New Pension Bill

Also favor resolution extending co-ordinator law for one year beyond June 16

A new railroad pension bill, in the form of the railroad retirement act declared unconstitutional in the recent decision of the Supreme Court but with slight revisions designed to meet criticisms of the law recognized by the minority of the court in the dissenting opinion by Chief Justice Hughes, has been introduced in Congress by Representative Crosser, of Ohio, and Senator Wagner, of New York, at the request of the Railway Labor Executives' Association.

The association was in session in Washington all last week, giving attention to bills in which the labor organizations are interested, particularly to the pension bill and to the Crosser-Wheeler resolution to extend for another year Title I of the emergency transportation act, under which Co-ordinator Eastman was appointed, including the restrictions against reductions in railroad employment through co-ordination projects. The present law expires on June 16. The labor leaders also arranged with a sub-committee of the Senate committee on interstate commerce, headed by Senator Loneragan, of Connecticut, for a hearing to begin on June 3 on various bills which they originated, including the six-hour day, train-limit, and full-crew bills. Tentative dates for this hearing have been set before but have been postponed.

The revised bill was approved by the executive committee of the Railway Labor Executives' Association on May 16 and introduced on the following day by Representative Crosser as H. R. 8121. A similar bill was introduced later by Senator Wagner. No attempt was made in the bill to meet the opinion of a majority of the Supreme Court that compulsory railroad pension legislation is beyond the Congressional power to regulate commerce. The principal change made was to eliminate the provision for payment of pensions to employees who had left the service of the carriers within a year before the enactment of the retirement law. Chief Justice Hughes in his dissenting opinion had agreed with the conclusion of the majority that this provision of the law was beyond the power of Congress but took the position that it could have been struck out without affecting the rest of the law. The new bill also eliminates the paragraph as to "purposes" in the act, which had included a reference to the possibilities of "greater employment opportunity" as well as to safety, but includes a title stating the purpose to be "to promote safe and efficient service to the public by the national system of rail transportation by providing a retirement system for railroad employees." The bill also includes within the meaning of "pay" on which pension annuities are to be based "the reasonable value of board rents, housing, lodging, and other similar advantages furnished for subsistence to an employee while in service" exceeding \$10 a month. The definition of "employee"

is changed to cover those in service of a carrier at or after the enactment of the law as well as representatives of employee organizations formerly employed.

Following the Supreme Court's decision Representative Crosser also introduced a bill to require a three-fourths majority of the Supreme Court to declare a law unconstitutional, while Representative Young introduced a bill "to regulate the Supreme Court" in connection with determining the constitutionality of statutes.

The Railway Labor Executives' Association issued a statement bitterly criticizing the court's decision and reiterating its determination to press for the enactment of pension legislation. "Nothing will be left undone to accomplish this end," according to the statement, "even though it may be necessary to advocate government ownership of railroads. The employees are demanding a plan of retirement security and we are convinced that they will have it at any cost." Nothing was said about depending on the old-age pension provisions of the pending social security bill, which contemplate a lower scale of annuities than that demanded by the railroad employee organizations. Timothy Shea, assistant president of the Brotherhood of Locomotive Firemen and Enginemen, called on railroad employees throughout the country to get in touch with members of Congress and "impress upon them the importance of prompt and favorable action, particularly on these two outstanding measures—the new railroad pension bill and the resolution to extend the emergency transportation act."

Mr. Shea and a group of the labor leaders called at the White House on Tuesday to urge the support of the President for their new bill and other legislation in which they are interested.

Specially-Arranged Train Used as Oil Distributing Plant

A train of four special railroad cars constituting a complete portable distributing plant which can be hauled to the scene of a construction project, has been developed by the Associated Oil Company of America in order to avoid trucking gasoline and other petroleum products over long distances. The new plant, the first of its kind to be developed, ordinarily comprises two 12,000 gal. tank cars; a flat car on which is carried a tank truck, pumping plant, rails and ties and a portable

loading rack; and a specially fitted box car used as a combination warehouse and office. However, any number of tank cars may be used if additional commodities are required by the job.

The plant was designed by George W. Hastings, operating manager, and B. G. Brown, superintendent of construction and maintenance, for Associated. Its chief advantages lie in the elimination of long-distance hauling by truck to projects, which often are located as far as 100 mi. from the nearest permanent distributing plant, and the great convenience to the contractor of having a large supply of gasoline and other products located directly on the job, with tank truck to make deliveries immediately to any part of the job when desired. When a large project such as the laying of railroad tracks, the building of a new highway or the erection of a dam is to be serviced with Associated products, and the location is a considerable distance from a company plant, the new portable distributing plant is brought in, a temporary spur track is laid using the ties and rails carried as part of the equipment, the tank truck is unloaded and the loading rack set up, and delivery service to all parts of the project is immediately inaugurated. After the rails, ties, etc., are unloaded from the flat car, this car serves as a support for the pumping plant and as a warehouse platform. When it is necessary to replenish the tank car storage, gasoline is brought in by tank car and pumped by the pumping plant into the tank cars of the portable plant. The pumping plant, operated by a gasoline motor, also moves the gasoline from the storage tank cars through the loading rack into the truck for "on location" deliveries.

The portable plant, when in operation, is arranged so that the storage tank cars are placed at the end of the temporary spur track, separated from the regular railroad siding by an earth bumper. Next in line along the temporary track is coupled the flat car, which serves as a loading platform for products in drums and which carries the pumping plant and loading rack. To the other end of the flat car is coupled the box car, with end doors opening onto the flat car in order to facilitate movement of packaged goods onto the flat car loading platform. Buckets, tools, fire extinguishers and office equipment are all a regular part of the box car's equipment.



The Associated Oil Company's Portable Distributing Plant

New Jersey Board Denies Railway Tax Appeals

Appeals by railroads operating in New Jersey from 1934 tax assessments involving more than \$7,000,000 were denied on May 21 by the state board of tax appeals. The basis of the conclusion was not made known, but the board announced that a formal decision will be given later.

New York-Boston, 4½ Hrs.

The New York, New Haven & Hartford, beginning May 26, will run its Yankee Clipper and the Merchants' Limited between New York and Boston in 4 hrs. 30 min., or 15 min. faster than at present. The trains will start from both New York and Boston the same as now; noon and 4 p. m. Standard Time. The Senator, Boston-Washington train, will be quickened 10 minutes.

April Locomotive Shipments

April shipments of railroad locomotives from the country's principal manufacturing plants totaled 15, as compared with 16 in March and none in April, 1934, according to reports received by the U. S. Department of Commerce. Unfilled orders at the end of April totaled 83, as compared with 91 at the end of March and 146 at the end of April, 1934. These figures do not include locomotives produced by railroads in their own shops.

New York State Crossing Law

The Legislature of New York has passed, and the Governor has approved, three acts modifying the laws regulating the elimination of grade crossings. This action will enable the officers and agents of the State to accept funds from the Federal government which may be allocated for the elimination of grade crossings. This includes elimination of crossings; or reconstruction; or repairs of existing structures.

I. C. C. Bills Passed by Senate

The Senate on May 20 passed two bills recommended by the Interstate Commerce Commission in its annual report, which had been passed by the House. H. R. 4005 changes the date for the commission's annual report to Congress from December to January and H. R. 4751 provides that upon the expiration of his term of office a commissioner shall continue to serve until his successor is appointed and shall have qualified.

North Western Adds New Train to Twin Cities Service

Changes in schedules between Chicago and the Twin Cities, involving the establishment of a new day train operating on an eight-hour schedule by way of Madison, Wis., and a reduction in running time of two hours on the southbound schedule of the North Western Limited, will be made by the Chicago & North Western on June 2. A reduction of 1 hr. 10 min. on the northbound schedule of the Duluth-Superior Limited between Chicago and Duluth, Minn., also will be made.

The new train, which will be run by

way of Madison, will leave Chicago at 9:30 a. m. and arrive at Madison at 11:59 a. m., St. Paul at 5:30 p. m. and Minneapolis at 6 p. m. Returning, it will leave Minneapolis at 8:10 a. m., St. Paul at 8:45 a. m., and will arrive at Madison at 2:10 p. m. and Chicago at 4:45 p. m. Stops in both directions will be made at Janesville, Wis., and Elroy.

The Duluth-Superior Limited will leave Chicago at 6:15 p. m. instead of 5:40 p. m. and will arrive at Duluth at 7:30 a. m. instead of 8:05 a. m. The North Western Limited will leave Minneapolis at 11:10 p. m. and St. Paul at 11:45 p. m. and will arrive at Chicago at 7:45 a. m., stopping at Wyeville, Wis., Milwaukee and Davis street, Evanston, Ill.

New York Central Pensions

F. E. Williamson, president of the New York Central, announces to employees and retired employees that, the Federal Retirement Act having been declared unconstitutional, the company is to continue the operation of its voluntary pension system as heretofore.

Freight Claim Agents Meet at Chicago

A proposal of the General committee of the Freight Claim division of the Association of American Railroads for a central bureau to investigate and adjust freight claim payments was voted down by the members, 198 to 21, at the annual meeting of the association at Chicago on May 21. The meeting also took action upon other matters, including principles and practices and freight claim prevention.

B. & O. Light-Weight Trains— A Correction

In an article beginning on page 671 of the May 4 issue of the *Railway Age*, describing the Baltimore & Ohio light-weight passenger trains, two references to the source of the plush furnished for the upholstery were in error. The Massachusetts Mohair Plush Company supplied materials used for upholstery on the double reclining-back seats in two of the coaches and also on the single rotating seats in the chair cars and in one end of the observation-chair car.

System Board for Pennsylvania Dining Car Stewards

A system board of adjustment for the settlement of differences arising between the Pennsylvania and its dining car stewards has been established on that road. This is the eighth board of this character to be set up on the P.R.R. under the provisions of the Railway Labor Act; approximately 100,000 employees, or 85 per cent of the road's entire force, are now governed in their relations with the management by system boards.

Pioneer Limited Speeded Up

Coincident with the inauguration of the Hiawatha on a 6½-hr. schedule between Chicago and the Twin Cities on May 29, the Chicago, Milwaukee, St. Paul & Pacific will reduce the running time of its Pioneer Limited, 1 hr. 50 min. northbound and 2 hr. 10 min. southbound. It will leave Chicago at 9 p. m. instead of 6:45

p. m. and will arrive in St. Paul at 7:25 a. m. instead of 7 a. m. and Minneapolis at 8 a. m. instead of 7:35. Returning, it will leave Minneapolis at 11:30 p. m. instead of 9 p. m. and St. Paul at 11:59 p. m. instead of 9:35 p. m. and will arrive in Chicago at 8 a. m. instead of 7:45.

Southern's Summer Service to "Land of the Sky"

In order to take care of Summer travel to Western North Carolina and Eastern Tennessee "Land of the Sky" resorts the Southern on June 15 will augment its passenger train service to and from that region. New sleeping car service will be available to and from Asheville, N. C., from New Orleans, La., via Oakdale, Tenn., and from New Orleans, via Atlanta, Ga.; also from Richmond, Va., and Atlanta, to Asheville. On June 16 Summer trains Nos. 1 and 2 between Spartanburg, S. C., and Asheville, will be re-established and will handle the New Orleans-Asheville via Atlanta and Atlanta-Asheville sleeping cars. In addition, through sleeping car service has already been inaugurated from Miami, Fla., to Asheville, via Jacksonville.

Positions Open

The United States Civil Service Commission, Washington, D. C., will receive, until June 24, applications for the position of passenger rate clerk, at \$2,000 a year. Applicants must have had at least three years of suitable experience. The commission also will receive, until June 17, applications for the position of mediator, at an entrance salary of \$3,800. Applicants must have had at least five years of responsible experience in dealing with labor relations, preferably in the railroad industry. Full information may be obtained from the secretary of the U. S. Civil Service Board of Examiners, in any city which has a post office of the first or second class.

I. C. Adopts 5½-Hr. Schedule to St. Louis

To demonstrate that it is practicable to establish regular 5½-hr. passenger train service between Chicago and St. Louis, Mo., the Illinois Central, on May 20, ran a special train of standard equipment from Chicago to Madison, Ill., in 5 hr. for the 287.5 miles. On June 2, this road will place its "Daylight" on a schedule of 5½ hr. between Chicago and St. Louis, while later in the year it will place its Diesel-powered, streamlined train in service between these two cities. The "Daylight" will leave Chicago at 4 p. m. instead of 3 p. m. and will arrive in St. Louis at 9:30 p. m. as at present. Returning, it will leave St. Louis at 12:15 p. m. as at present and will arrive in Chicago at 5:45 p. m. instead of 6:45 p. m.

J. Crawford Biggs to Handle Northern Pacific Land Grant Litigation

J. Crawford Biggs, formerly solicitor general of the United States, has been appointed to try the cases of United States v. Northern Pacific Railway Company, pending in the federal court in Washing-

ton and involving the adjustment of the land grant made to the Northern Pacific by the act of July 2, 1864, and joint resolution of May 31, 1870. The case involves the railway company's right to compensation for approximately 3,000,000 acres of land embraced in government reservations in the states of Wisconsin, Minnesota, North Dakota, Montana, Idaho, Washington and Oregon, and the surrender by the railway company of its claim of title to this area. The case was brought in 1930 after an extensive investigation by a joint committee of the Senate and House, whose hearings extended over a period of nearly five years and culminated in the passage of an act directing the Attorney General to bring the suit.

Chicago and Detroit, Five Hours

The Michigan Central and the Pennsylvania-Wabash, beginning June 2, will operate the Twilight Limited and the Detroit Arrow on schedules of 5 hr., reducing the present time half an hour. The Twilight Limited will leave Chicago at 4:30 p. m. (central time) instead of 4 p. m. and will arrive in Detroit (284 miles) at 10:30 p. m. (eastern time) as at present; returning, it will leave Detroit at 4:40 p. m. (eastern time) instead of 4:30 p. m. and will arrive in Chicago at 8:40 p. m. instead of 9 p. m. Stops will be made at Sixty-third street, Chicago; Niles, Mich.; Kalamazoo, Battle Creek, Jackson and Ann Arbor.

The Detroit Arrow will leave Chicago at 4:10 p. m. (central time) instead of 4 p. m. and will arrive in Detroit (294 miles) at 10:10 p. m. (eastern time) instead of 10:30 p. m., while returning it will leave Detroit at 4:10 p. m. (eastern time) and arrive in Chicago at 8:10 p. m. (central time). Stops will be made at Sixty-third street, Chicago; Gary, Ind., and Ft. Wayne.

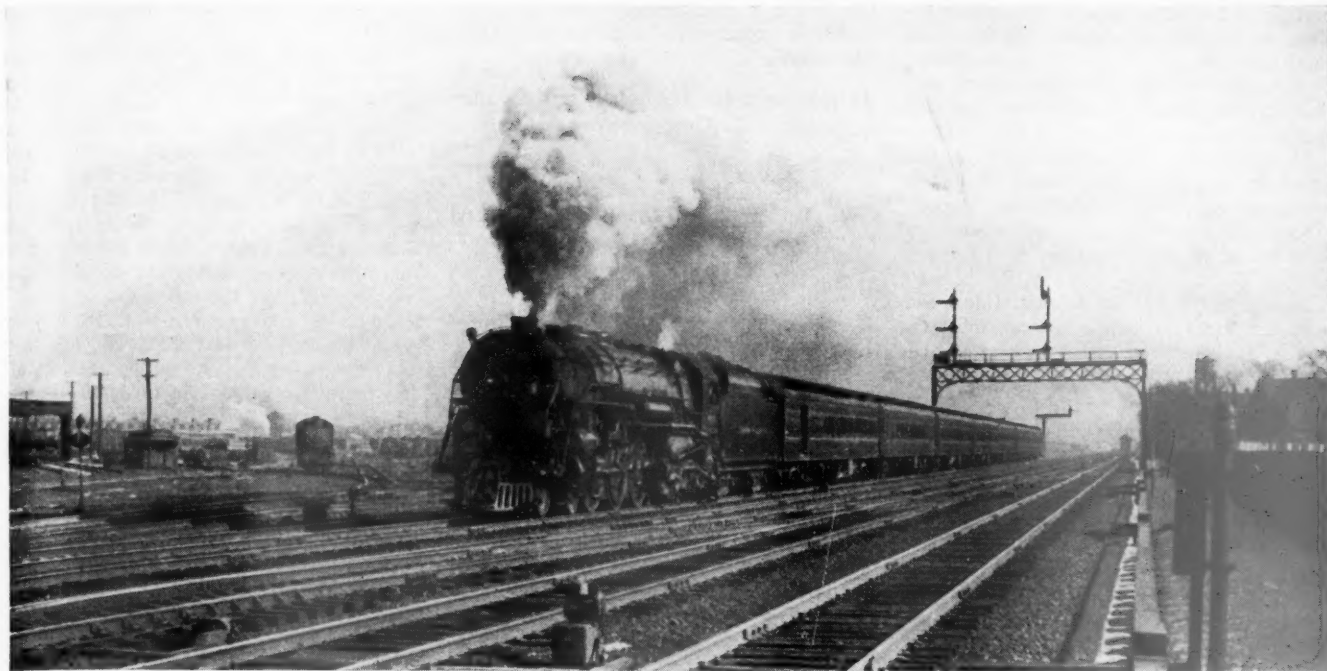
Restitution of Charges Collected Before Order Was Invalidated Not Required

The Supreme Court of the United States in a 5 to 4 decision holds that a railroad company which collected rates established by an order of the Interstate Commerce Commission before the order was held void by the Supreme Court is not required to make restitution for the whole or any part of the rates collected from its customers while the order was in force after it was adjudged invalid on the ground that the Commission's report did not contain the necessary findings. (282 U. S. 194; 292 U. S.)

The scale of charges in question was that of the Atlantic Coast Line, known as the Cummer scale for the transportation of logs in train and carload shipments within Florida.

Restitution, the court said, is not of mere right. It is ex gratia, resting in the exercise of a sound discretion, and the court will not order it where the justice of the case does not call for it, nor where the process is set aside for a mere slip.

The Supreme Court held that the rates under the schedule in question were not collected in such circumstances as to move a court of equity, finding the proceeds of collection in the possession of the carrier,



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to help the shipper and their representatives in getting the money back. The rates were those prescribed for the future by the appointed administrative agency, and that on two occasions, after scrutiny and study of injustice suffered in the past.

In the absence of a showing that the schedule set up by the Commission was unreasonable, it was held that the carrier did not offend against equity and conscience in standing on its possession and keeping what it got.

Decree of the Federal District Court for northern Georgia confirming a master's report advising restitution was reversed and the claims ordered to be dismissed.—Atlantic Coast Line v. State of Florida and E. S. Matthews. Opinion by Mr. Justice Cardozo. Mr. Justice Roberts wrote a dissenting opinion, in which the Chief Justice, Justice Brandeis and Justice Stone concurred. Decided April 29, 1935.

Club Meetings

The Toronto (Ont.) Railway Club will hold its next meeting at the Royal York Hotel, Toronto, on Friday, June 7. This will be the summer-dinner meeting, and there will be a golf tournament and a motor tour of the city in the afternoon, with a dinner, entertainment and speaking in the evening.

Judge R. V. Fletcher, vice-president and general counsel of the Association of American Railroads, was the principal speaker at the May 20 meeting of the Richmond (Va.) Traffic Club. Judge Fletcher took as his subject "A Sound Transportation Policy."

The next meeting of the Pacific Railway Club will be held on Thursday evening, June 13, at the Transportation Club, Palace Hotel, San Francisco. Speakers on "Maintenance of Way" will be P. T. Robinson, engineer maintenance of way, Southern Pacific; T. L. Phillips, principal assistant engineer, Western Pacific, and A. H. McKeen, signal supervisor, Union Pacific.

Electric Freight-Train Operations Inaugurated by P. R. R.

The Pennsylvania, on May 20, inaugurated electric operation of freight trains on the New York-Washington electrified section of its line. The first freight train to be regularly operated by electricity was the Speed Witch, overnight merchandise train in both directions between the Philadelphia, Pa., and Baltimore, Md., area and Boston, Mass., and Providence, R. I. This train is now being operated electrically from Baltimore, Md., to New Haven, Conn., via Greenville, N. J., and the electrified Hell Gate Bridge route and the New Haven, a distance of approximately 260 mi., in addition to the ferry trip across upper New York Bay.

Other through freight trains in the New York-Washington area will soon be operated by electric power as far south as Baltimore, the number being increased as fast as delivery of the new streamlined GG-1 type passenger electric locomotives permits the transfer of additional non-streamlined electrics to freight service. Electric freight train operations south of Baltimore will be instituted as soon as the electrifica-

tion work is completed in Potomac Yard, which is expected to be about the end of this month.

Allotments for Highways and Grade Crossings

Allotment of \$400,000,000 of work-relief funds for construction on highways, roads, streets and grade crossing eliminations, and \$100,000,000 to care for highway work previously authorized and begun under the Hayden-Cartwright act was recommended to the President on May 16 by the Advisory Committee on Allotments.

The apportionments call for \$200,000,000 to be used for railway grade crossing eliminations, allotted to the states on the basis of population and road and rail mileage as follows:

Alabama	\$4,034,617
Arizona	1,256,099
Arkansas	3,574,060
California	7,486,362
Colorado	2,631,567
Connecticut	1,712,684
Delaware	418,239
Florida	2,827,883
Georgia	4,895,949
Idaho	1,674,479
Illinois	10,307,184
Indiana	5,111,096
Iowa	5,600,679
Kansas	5,246,258
Kentucky	3,672,387
Louisiana	3,213,467
Maine	1,426,861
Maryland	2,061,751
Massachusetts	2,010,833
Michigan	6,765,197
Minnesota	5,395,441
Mississippi	3,241,475
Missouri	6,142,153
Montana	2,722,327
Nebraska	3,556,441
Nevada	887,260
New Hampshire	822,484
New Jersey	3,983,826
New Mexico	1,725,286
New York	13,577,189
North Carolina	4,823,958
North Dakota	3,207,473
Ohio	8,439,897
Oklahoma	5,004,711
Oregon	2,334,204
Pennsylvania	11,483,613
Rhode Island	699,691
South Carolina	3,059,956
South Dakota	3,249,086
Tennessee	3,903,979
Texas	10,855,982
Utah	1,230,763
Vermont	729,857
Virginia	3,774,287
Washington	3,095,041
West Virginia	2,677,937
Wisconsin	5,022,683
Wyoming	1,360,841
Dist. of Col.	410,804
Hawaii	453,703
Eng. & Adm. Res.	4,000,000
Total	\$200,000,000

The President said on Wednesday that he had given his verbal approval of the allotments, although the official form for the written approval had not yet been prepared.

L. C. Probert Discusses Government Ownership of Railways

To socialize the backbone of American industry it is only necessary to begin by socializing the railroads, said L. C. Probert, vice-president of the Chesapeake & Ohio, in his address at the May 21 luncheon-meeting of the Traffic Club of New York. Mr. Probert warned that the threat of government ownership is more potent today than it has been for a long time, citing in this connection such developments as the bill introduced by Senator Wheeler and the disposition of railway labor leaders to get behind a government ownership bill if they are otherwise un-

successful in their drive for pension legislation.

The ramifications of government ownership, Mr. Probert said, would be such as to bring about also an agitation for public operation of all other carriers, as well as the socialization of railway equipment and supply industries. Those advocating it, he continued, fall into two classes—one group consists of people who feel that the government should do everything and the other is comprised of politicians who merely have the railroad jobs in view. Finding no reasons advanced for government ownership, Mr. Probert considered the "assertions" of its proponents. Taking these "assertions" in turn, he disposed of contentions that the railroad industry is grossly over-capitalized, that the railroads are hopelessly in debt, that they cannot earn their fixed charges and that they cannot finance capital requirements. All of the foregoing he found to be false as applied to the railroad industry as a whole and suggested that where an individual railroad's financial set-up requires correction the means for such correction exists.

Mr. Probert next cited the Canadian National as "a fine example of government ownership" in connection with which "the only satisfaction the taxpayer of Canada has been able to get is that one political party blames the other" for the financial situation there. Bureaucracy, he continued, always starts with "the soft name of co-ordination," adding that business men in this country can have Congressional rate-making just as they have Congressional tariff-making if they desire it. He warned, however, that Congressional rate-making in the railroad field would make Congressional tariff-making seem like "a lot of bed-time stories."

At a brief business session the Club approved the resolution condemning various "make work" bills, now before Congress as part of railway labor's legislative program, which was proposed at the recent Virginia Beach (Va.) meeting of the Associated Traffic Clubs for ratification by the latter's affiliated organizations.

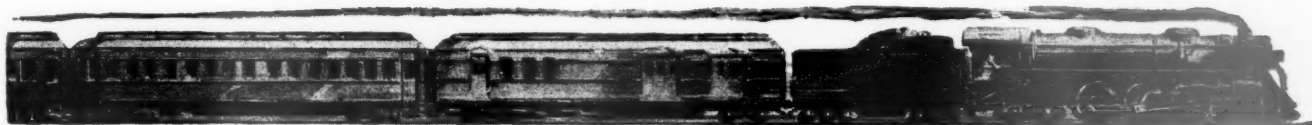
G. I. Wright Discusses Electricity's Place in Railroading

In an article entitled "Electricity's Place in Railroading" which appears in the May issue of the Scientific American, G. I. Wright, chief electrical engineer of the Reading and the Central of New Jersey, discusses the place of electric traction in railroad transportation. Mr. Wright's article is the second of a series of three which that magazine is publishing on railroad motive power. The first—an article on the steam locomotive—was prepared by William C. Dickerman, president of the American Locomotive Company, and published in the April issue; an abstract of Mr. Dickerman's article appeared in the *Railway Age* of April 13, page 584. In the third and final article of the series, to be published in the Scientific American for June, George W. Codrington, president of the Winton Engine Company, will state the case for the Diesel.

Mr. Wright opened with a brief resume of electrical developments in this country.



HAS YOUR CAR EVER BEEN MIRED ?

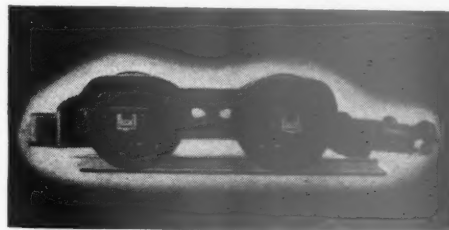


If it has, you know the excessive wear and tear, the abuse imposed in getting on hard ground again.

It's the same way with the locomotive starting too much train—the drivers spin, the slack is bunched, sometimes again and again, before the train gets rolling.

The Booster changes all this. It provides the extra traction required to get the train started smoothly. It avoids spinning drivers, the yank and crash between couplers, the destructive abuse to locomotive and cars.

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pointing out that the first project was the electrification of the Baltimore & Ohio's Baltimore tunnel in 1895. During the present year, he continued, there will be 750 electric locomotives in use in this country or less than 1.5 per cent of the total locomotives in use. These electric locomotives, Mr. Wright said, "have been chosen to handle the most difficult operating problems the railroads have had to cope with." He cited in this connection the operating and traffic characteristics of electrified sections on the Virginian, the Norfolk & Western, the Great Northern and the Pennsylvania. He also called attention to the fact that there are in suburban service 2600 electric multiple-unit cars, which he characterized as "the only known means of providing the rapid acceleration necessary to maintain high schedule speeds."

The principal advantage of electric motive power, Mr. Wright pointed out, lies in the fact that the electric locomotive or car receives its power from a central power plant and electric motors can be overloaded for short periods, thus permitting the locomotive to accelerate at maximum rates to quite high speeds, and to maintain high speeds on grades—a feature "of great importance to the railroad operator, enabling him to shorten schedules without the necessity of increasing maximum speeds or raising speed restrictions necessitated by operating conditions at various points."

Coming to his consideration of the economics of electric traction Mr. Wright likened the railroad to a manufacturing plant of which the locomotive is the most important tool used. The electric locomotive, he said, can be maintained for much less than other types, it can do the same work with one half of the coal required for a modern steam locomotive and thus can be operated in similar services for from 50 to 65 per cent of the cost of operating a steam locomotive; multiple unit trains effect even greater operating savings. As an offset to this operating-cost advantage, however, Mr. Wright told how electric traction requires an additional investment in central power plant, distribution lines and substations which will amount to from \$25,000 to \$50,000 per single track mile with carrying charges amounting to from \$2,500 to \$5,000 per single track mile per year.

With this picture in mind Mr. Wright summarized the situation as follows: "A better tool in the electric locomotive is available. It, however, costs more than its counterpart, the steam locomotive. It also requires other facilities, the investment in which results in annual charges, irrespective of the density of the traffic. With this better tool, considerable savings in the cost of hauling a train-mile or a ton-mile can be made. If there is not sufficient traffic so that the operating savings will more than offset the increased fixed charges, electrification will not pay. If, however, heavy traffic is to be handled, the operating savings will be sufficient to pay the increased fixed charges and make the electrification a financial success."

With reference to the future, and the question as to whether electric power can accommodate the high-speed trains now

coming into use, Mr. Wright cited a study presented recently to the New York Railroad Club on this latter subject which, he said, concluded that "the advantages and economics of electrification are greater at the higher speeds with both conventional and lightweight streamlined trains."

Cotton Rate Structure Generally Not Unlawful

(Continued from page 829)

ential of traffic and the shippers thereof under the pool-car rule.

That with respect to southwestern points of origin, on the one hand, and Lake Charles and the Texas ports, on the other hand, the maintenance of an interstate carload rate from any point of origin to any port which is higher for substantially the same distance than the interstate carload rate from the same point of origin to another port, or from another point of origin to the same port, results and will result in undue prejudice to the cotton traffic upon which such higher level of rates is maintained and to the shippers thereof, and in undue preference of the traffic upon which the lower level is maintained and the shippers thereof.

That the relation of carload rates from Texas and from other southwestern states to points in southern territory is, and for the future will be, unduly prejudicial to Texas points and shippers of cotton therefrom and unduly preferential of points in other southwestern states and of shippers of cotton therefrom, and that this undue prejudice and preference should be removed by establishing carload rates from Texas to points in southern territory not in excess, distance considered, of the carload rates contemporaneously maintained from points in Oklahoma to the same destinations, and subject to substantially the same transit rules and regulations, due consideration being had for differences in the character of the rate adjustments and transit arrangements in the two states.

"The competition with which the rail carriers have been confronted, while very intense," the report says, "is of a character which is extremely difficult of appraisal, because even at the time when the transportation of cotton by unregulated agencies was at its height there was no authentic source of information available to the rail carriers as to the charges which were being made by such agencies. At the present time it is still more difficult because from a large portion of the territory the carload rate adjustment has had the effect, to a considerable extent, of eliminating the unregulated agencies from the transportation picture, with the result that the competition is quite largely potential only. It follows that an attempt to determine whether the competitive rail rates are lower than necessary to meet the competition, or whether the relation between such competitive rates is different from that which is warranted by the respective influences affecting individual rates, would involve a determination of the potential effect of competition much of which at the moment is quiescent, but which is by no means dead.

"The figures of record as to truck and barge costs are not comprehensive and, in any event, it is shown that such charges and costs were very unstable and fluctuating; that they were influenced by local conditions; that they were materially affected by the fact that sometimes pay loads could be obtained on the return trip and sometimes they could not; and that these competing agencies are able to provide service which, in some respects and under certain conditions, is more attractive than that which the railroads can furnish, but which is impossible of definite appraisal in dollars and cents. Furthermore, the rate level is not the only factor to be considered in this competitive struggle. Other matters, such for instance as transit arrangements, enter into it. A low level of rail rates with restricted or no transit may fail to get the business, whereas a somewhat higher level with liberal transit may be successful.

"Experienced railroad traffic men, who are vitally concerned with this situation, have made and are continuing to make such investigation of the matter as is possible, but they admit that they are, to a considerable extent, merely experimenting and groping in the dark, and that in the end the only way in which they are able to determine what will meet the competition is the method of trial and error.

"As just indicated, in attempting to meet the competition of the unregulated agencies, the railroad managements are afloat upon a sea of uncertainty. Their actions must be based upon their best judgment and when that judgment has been exercised this commission, which has frequently observed that it is not the manager of the railroads, should not interfere except upon clear and convincing evidence of some violation of the law which it administers."

Equipment and Supplies

LOCOMOTIVES

THE BANGOR & AROOSTOOK is inquiring for two or three 4-8-2 type locomotives. This company was reported in the *Railway Age* of May 18 as about ready to negotiate for two new heavy, freight, Mountain type locomotives.

THE SOUTH AFRICAN RAILWAYS ADMINISTRATION is inquiring for four Garrett type steam locomotives of two foot gage; bids to be received until 1 p. m. June 24, by the secretary of the tender board, headquarters office, Johannesburg, South Africa. Apply to the Transportation division, Bureau of Foreign and Domestic Commerce, Washington, D. C., for tender and specifications (no drawings), mentioning Exhibit 4131.

MOTOR VEHICLES

THE NEW YORK, NEW HAVEN & HARTFORD has received delivery of 51 motor

Continued on next left-hand page

SECURITY ARCH LOCOMOTIVES

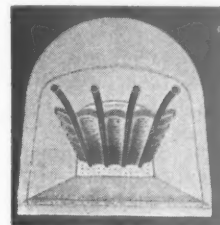


must perform satisfactorily

Unless locomotives equipped with Security Arches develop full capacity and steam freely — out goes the Arch Company service man to find the trouble and help solve it.

It may or may not be the arch but the American Arch Company man is there to serve. He brings to bear a rich practical experience and a thorough knowledge of combustion.

American Arch Company alone has behind it the experience and organization to give such service.



*There's More to
SECURITY ARCHES
Than Just Brick*

**HARBISON-WALKER
REFRACTORIES CO.**

Refractory Specialists



**AMERICAN ARCH CO.
INCORPORATED**

*Locomotive Combustion
Specialists* » » »

trucks for use in its maintenance of way department; 39 of the trucks were purchased from the Chrysler Corporation and 12 from the International Harvester Company.

IRON AND STEEL

THE CHICAGO, ROCK ISLAND & PACIFIC is inquiring for 250 tons of structural steel for a train shed at Chicago.

THE PENNSYLVANIA is inquiring for 365 tons of structural steel for a bridge at Ft. Wayne, Ind.

SIGNALING

Highway Crossing Signals in Illinois

The state department of Public Works and Buildings, division of highways, of Illinois, on May 19, called for bids for the installation of flashing light signals at 88 grade crossings on 13 railroads in Illinois, the bids to be opened on June 4. The action is part of the state highway safety program which will be financed under the federal National Industrial Recovery Administration program. The railroads include the Alton, the Atchison, Topeka & Santa Fe, the Baltimore & Ohio, the Baltimore & Ohio Chicago Terminal, the Chicago & Eastern Illinois, the Chicago Great Western, the Chicago & Illinois Midland, the Grand Trunk Western, the Illinois Terminal Company, the Litchfield & Madison, the Peoria & Eastern, the Southern and the Terminal Railroad Association of St. Louis.

Supply Trade

D. R. Manuel has been appointed western manager of the **Curtin-Howe Corporation**, New York, with headquarters at Chicago, and will have jurisdiction over the Minneapolis territory, the Pacific Northwest and Chicago and vicinity.

The office of the **Hercules Motor Corporation's** west coast representative has been moved from 613 Russ building, San Francisco, Cal., to Room 523 Transamerican building, Seventh and Olive streets, Los Angeles, Cal. **Oliver Kelly**, who is the direct factory representative for Hercules on the west coast, is now located at the latter address.

The **Jones & Laughlin Steel Corporation**, Pittsburgh, Pa., through its subsidiary company, the **Jones & Laughlin Steel Service, Inc.**, has purchased the fabricating shop, warehouse and business of the National Bridge Works, Long Island City, N. Y. The new properties, to be known as the **National Bridge Works Division of the Jones & Laughlin Steel Service, Inc.**, will be operated under direction of **Harry B. Royer**, formerly president and manager of National Bridge Works.

R. T. Pierson, manager of the Power Battery division of the **U S L Battery**

Corporation at Niagara Falls, N. Y., has been elected vice-president and general manager with the same headquarters, **A. A. MacLean**, vice-president, having resigned. Previous to his connection with the **U S L Battery Corporation**, Mr. Pierson had served as vice-president of the General Cable Corporation, president and treasurer of Bremer-Tully Manufacturing Company and president and treasurer of the Hazeltine Corporation.

Herbert F. Sauer, manager of the Cleveland, Ohio, branch of the **Electric Storage Battery Company**, Philadelphia, Pa., has been appointed manager of the Chicago branch, and **William P. Roche**, for many years in charge of the Exide Automotive Replacement division at Cleveland, succeeds Mr. Sauer as manager of the Cleveland branch. Herbert F. Sauer entered the employ of the Electric Storage Battery Company in 1905 at Cleveland; in 1909 he was transferred to the Atlanta, Ga., branch, returning to Cleveland in 1913 and since 1920 he has served as manager of the Cleveland branch. William P. Roche entered the employ of the Electric Storage Battery Company in 1910 and during the last 25 years has served in a number of responsible capacities on the sales staff of the Cleveland branch.

OBITUARY

W. E. J. Gillahan, of the sales department, Railway Steel Spring Division, American Locomotive Company, died suddenly on May 20 at New York.

James M. Monroe, vice-president of the Okadee Company and the Viloco Railway Equipment Company, both of Chicago, died at his home at Salisbury, N. C., on May 21. Early in his career Mr. Monroe served the Southern in various mechanical capacities, then entering the supply field as a representative of the Hunt Spiller Manufacturing Corporation. For the past 15 years he had represented the Viloco Railway Equipment Company and the Okadee Company in the southeastern states.

Construction

BALTIMORE & OHIO.—The Cable Company, Inc., Canton, Ohio, was the low bidder for the work of relocating 5.25 miles of this road's line in the vicinity of the Beach City (Ohio) reservoir. A brief description of this project, which is being handled by the United States Engineer office, Zanesville, Ohio, was published in the April 27 issue.

CANADIAN PACIFIC.—A contract has been awarded to Th. Borgford & Sons, Ltd., Winnipeg, Man., for the renewal of a portion of the roof of this company's locomotive shop at the Winnipeg terminals, at a cost of about \$40,000.

This company has also undertaken the construction of a concrete and steel bridge

at mile 104.6 on the Thompson subdivision in British Columbia, to replace a timber structure. The new bridge, which will consist of a steel span on concrete piers and abutments will cost about \$40,000. The contract for the construction of the substructure of the bridge has been awarded to Moncrieff & Vistaunet, Vancouver, B. C.

CHICAGO & NORTH WESTERN.—A contract has been awarded to the C. R. Meyer & Sons Co., Oshkosh, Wis., for the construction of a highway subway to carry U. S. Highway 41 under the single-track line of the North Western 1½ miles south of Fond du Lac, Wis. The railroad will be carried over the highway on a 79-ft. 9-in. through plate-girder span. The structure will cost about \$43,000.

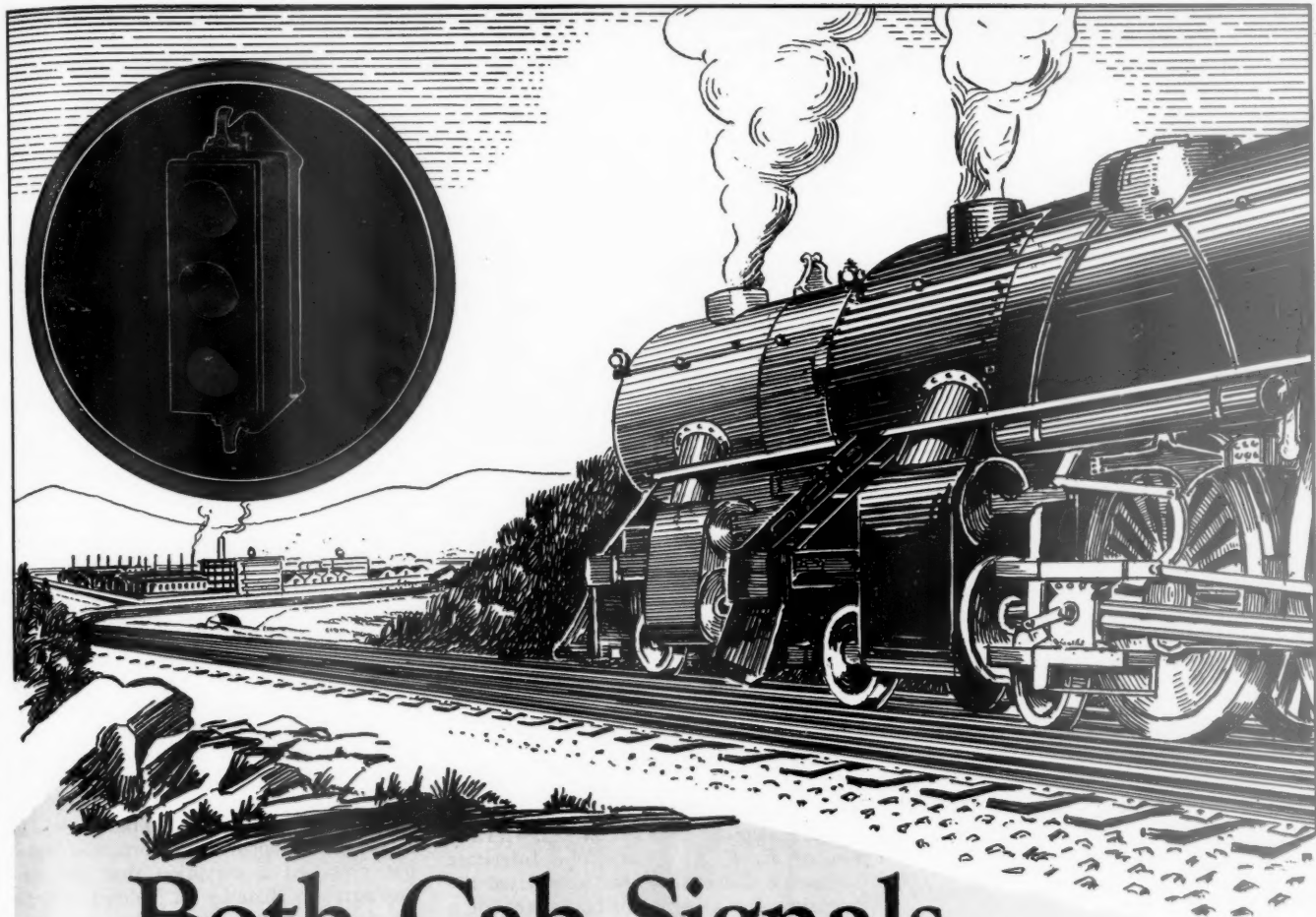
DELAWARE, LACKAWANNA & WESTERN-ERIE.—The New York Public Service Commission has approved an estimate of cost of \$1,407,010, exclusive of land and property damages, for the elimination of various grade crossings of these roads located west of the Chenango river in Binghamton, N. Y. The crossings are at Liberty street, Prospect avenue, Oak, Murray, Walnut, Crandall, Charles and Jarvis streets, Glenwood avenue and Emma street. The commission has also approved a revised general plan and specifications and an estimate of cost of \$135,400 in connection with the elimination of the Liberty street and Nanticoke avenue crossings of the Erie in Endicott; the village of Endicott will pay \$5,900 additional for concrete pavement, etc.

NEW YORK CENTRAL.—This road has given a contract to J. J. Tully, New York, for eliminating the grade crossing at West One Hundred and Seventy-first street, New York City. The work will cost about \$123,700. See *Railway Age*, February 16, page 282.

NEW YORK CENTRAL.—The elimination of the Bairds crossing of this road in the town of DeKalb, N. Y., has been directed by the New York Public Service Commission. The elimination is to be accomplished by constructing an undercrossing at an estimated cost of \$81,300.

NEW YORK CENTRAL.—Plans and specifications submitted by this road for a passenger station and facilities to be constructed in connection with the elimination of grade crossings in Syracuse, N. Y., were approved by the New York Public Service Commission. The estimated cost of the work is \$450,000, exclusive of land and property damages. An estimate of \$28,000 for furnishing and installing four elevators for the baggage subway and one elevator for the mail and service building were also approved by the commission.

WABASH.—Bids will be received at the office of the chief engineer for the receivers of this road, St. Louis, Mo., until 10 a.m. Central Standard Time, June 12, for the construction of the superstructure of the spans and approaches of a railway bridge over the Missouri river near St. Charles, Mo. See item in *Railway Age*, May 11, page 754.



Both Cab Signals Turned "RED!"

A DERAILMENT, caused by an automobile, tore down a home signal bridge at an interlocking. Preceding the accident, a freight train, moving in the opposite direction, had passed the "clear" distant signal. A passenger train had entered the second block back also under a "clear" signal. At the instant the home signal bridge fell across the tracks and broke the wire connections, the cab signal in the freight locomotive changed from "green" to "red", while that in the passenger locomotive changed from "green" to "yellow" and upon entering the next block to "red." Both engineers stopped short of the overturned bridge.

Continuously controlled and constantly visible, "Union" Cab Signals give engineers *instantaneous* information of changes in track conditions ahead—whether more or less restrictive—regardless of the position of the train in the block or weather or physical characteristics. » » » » » » » »

Why not ask our nearest district office for detailed information?

946

1881

Union Switch & Signal Co.

1935

NEW YORK

MONTREAL

SWISSVALE, PA.
CHICAGO

ST. LOUIS

SAN FRANCISCO

Financial

CHICAGO, ROCK ISLAND & PACIFIC.—Valuation.—The final value for rate-making purposes as of December 31, 1932, of all properties embraced in the Rock Island system used for common-carrier purposes was found to be \$445,809,449 in a report made public by the Interstate Commerce Commission, Division 1, on May 18. The report was made as of that date because of the proposal for a consolidation of the properties, which was dismissed on May 11, 1934, because of a refusal of the carriers to accept a condition imposed by the commission's report. The final value approximates the total outstanding capitalization as of December 31, 1932, which was \$446,184,295, but is less than the investment in road and equipment. This was stated on the books as \$513,546,721 but with readjustments required by the commission's accounting examination would be reduced to \$494,165,224. The approximate original cost to December 31, 1932, in part estimated, was placed at \$505,673,998.

COLORADO & SOUTHERN.—Annual Report.—The 1934 annual report of this company shows net deficit, after interest and other charges, of \$1,133,078, as compared with net deficit of \$575,347 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
RAILWAY OPERATING REVENUES	\$11,797,868	\$11,789,557	+\$8,311
Maintenance of way	1,248,894	1,119,420	+129,474
Maintenance of equipment	1,991,807	1,950,054	+41,753
Transportation	4,121,127	3,835,368	+285,759
TOTAL OPERATING EXPENSES	8,601,582	8,018,924	+582,658
Operating ratio	72.91	68.02	+4.89
NET REVENUE FROM OPERATIONS	3,196,285	3,770,632	-574,347
Railway tax accruals	1,061,503	1,120,660	-59,157
Railway operating income	2,129,639	2,644,282	-514,643
Hire of equipment—Net Dr.	382,247	376,789	+5,458
Joint facility rents—Net Dr.	320,237	277,913	+42,324
NET RAILWAY OPERATING INCOME	1,427,154	1,989,579	-562,425
Non-operating income	194,657	205,454	-10,797
GROSS INCOME	1,621,811	2,195,033	-573,222
Interest on funded debt	2,672,797	2,685,275	-12,478
TOTAL DEDUCTIONS FROM GROSS INCOME	2,754,890	2,770,381	-15,491
NET DEFICIT	\$1,133,078	\$575,347	+\$557,731

DENVER & SALT LAKE.—Abandonment.—The Interstate Commerce Commission has authorized this company to abandon a line extending from a point near Newcomb, Colo., by way of Corona, to a point near Vasquez, 31.8 miles. The line to be abandoned connects at both ends with the main line of the D. & S. L., and is the main line over which it operated over the continental divide prior to the construction of the Moffat tunnel.

ERIE.—Securities.—The Interstate Commerce Commission has authorized this company to issue \$1,000,000 of 4 per cent registered serial collateral notes, in addition to \$2,671,000 of such notes previously authorized, and to sell them at par to the government, the proceeds to be used for track maintenance and rail purchases. The issue is to be secured by the pledge of \$750,000 of its refunding and improvement mortgage 6 per cent bonds, series of 1932, and its equity in \$38,708,800, par value, of securities already pledged to the Reconstruction Finance Corporation.

FLORIDA EAST COAST.—Flagler Estate Interest.—Samuel Seabury of New York has been appointed referee by the Supreme Court of New York County to conduct an accounting of the residue of the estate of the late Mrs. Mary Flagler Bingham, and to decide whether further payments should be made by this estate on account of interest due on bonds of the railway.

GULF, MOBILE & NORTHERN.—Notes.—The Interstate Commerce Commission has authorized this company to issue \$212,000 of 4 per cent registered serial collateral notes to be sold at par (secured by the pledge of \$418,000 of N. O. G. N. first mortgage bonds) to the Public Works Administration and the proceeds used for roadway maintenance.

MARYLAND & PENNSYLVANIA.—Extension of R. F. C. Loan.—The Interstate Commerce Commission has authorized the extension, for a period of two years, of a loan of \$100,000 by the Reconstruction Finance Corporation of this road which matures on May 25.

MINNEAPOLIS & ST. LOUIS.—Senator Opposes Partition Plan.—Senator Bulow, of South Dakota, has introduced in the Senate a resolution to direct all agencies of the government, including the Reconstruction Finance Corporation and the Interstate Commerce Commission to defer approving a plan for the sale, reorganization, or dismemberment of the Minneapolis & St. Louis for a period of one year and also to defer making any loans to purchasers of portions of the road, to the end that "all concerned have an opportunity to encourage the reorganization of this property in a manner fair and equitable to all concerned."

MISSOURI & NORTH ARKANSAS.—Sale.—The Missouri & Arkansas Railway Co. was the purchaser at the recent judicial sale of the properties formerly owned by the Missouri & North Arkansas Railway Co. Frank Kell of Wichita Falls, Tex., is chairman of the board of the new company and Joe A. Kell is president. The vice-president and general manager is L. M. Bassett of Harrison, Ark.

PENNSYLVANIA.—Abandonment.—This company has applied to the Interstate Commerce Commission for authority to abandon 15 branch lines in Pennsylvania, aggregating 25 miles.

ST. LOUIS SOUTHWESTERN.—R. F. C. Loan.—The Southern Pacific has applied to the Interstate Commerce Commission

for authority to guarantee notes of the St. Louis Southwestern to the Reconstruction Finance Corporation to the amount of \$17,882,250 maturing June 1, for which the St. L. S. W. has applied for an extension.

SOUTHERN PACIFIC.—Abandonment.—The federal government has filed with the Interstate Commerce Commission a brief opposing the Southern Pacific application for authority to abandon the old Promontory Point line of the Central Pacific around Great Salt Lake between Kelton, Utah, and Lucin, on the grounds that it is required for public convenience and necessity; that it is needed for national defense purposes as an alternate to the Lucin cut-off line across the Lake, which is part of the primary line of connection between the central part of the country and the San Francisco area; and that its abandonment would be violative of statutory and contract rights of the United States, as the line was originally built with government aid.

UNION PACIFIC.—Lease.—This company has applied to the Interstate Commerce Commission for a re-opening of the proceeding in which it asked authority in 1932 to lease the properties of the Oregon Short Line, the Oregon-Washington, the Los Angeles & Salt Lake, and the St. Joseph & Grand Island. The commission at the time approved the proposed leases, but proposed a condition that the company agree to abide by its findings as to the acquisition or operation of two short lines, the Laramie, North Peak & Northwestern and the Pacific & Idaho Northern. The company declined to accept the condition, but now is willing to agree to it and desires to proceed with the leasing plan.

Average Prices of Stocks and of Bonds

	Last May 21	Last week	Last year
Average price of 20 representative railway stocks..	32.21	32.06	40.89
Average price of 20 representative railway bonds..	73.14	73.32	78.24

Dividends Declared

Atlanta, Birmingham & Coast.—5 Per Cent Preferred, \$2.50, semi-annually, payable July 1 to holders of record June 12.
 Cayuga & Susquehanna.—\$1.20, semi-annually, payable July 1 to holders of record June 20.
 Chesapeake & Ohio.—70¢, quarterly, payable July 1 to holders of record June 7.
 Cincinnati, New Orleans & Texas Pacific.—Preferred, \$1.50, quarterly, payable June 1 to holders of record May 15.
 Illinois Central.—Leased Lines.—\$2.00, semi-annually, payable July 1 to holders of record June 10.
 New York & Harlem.—Common, \$2.50, semi-annually; Preferred, \$2.50, semi-annually, both payable July 1 to holders of record June 14.
 North Central.—\$2.00, semi-annually, payable July 15 to holders of record June 29.
 North Pennsylvania.—\$1.00, quarterly, payable May 25 to holders of record May 20.
 Philadelphia, Baltimore & Washington.—\$1.50, semi-annually, payable June 20 to holders of record June 15.
 Philadelphia, Germantown & Norristown.—\$1.50, quarterly, payable June 4 to holders of record May 20.
 Richmond, Fredericksburg & Potomac.—Common, \$2.00, semi-annually; Non-voting Common, \$2.00, semi-annually; Dividend Obligations, \$2.00 semi-annually, all payable June 30 to holders of record June 22.
 Western New York & Pennsylvania.—\$1.50, semi-annually, payable July 1 to holders of record June 29.
 West Jersey & Seashore.—\$1.50, semi-annually; 6 Per Cent Special Preferred, \$1.50 semi-annually, both payable July 1 to holders of record June 15.

Continued on next left-hand page

The Dispatcher says—*"Elesco equipped engines don't lose time when I hang on a few extra cars and they don't have to stop so often for water."*



LOCOMOTIVES equipped with Elesco feed water heaters can be depended on to handle that extra load and maintain schedules.

stantial saving in fuel and water. Hence, less fuel is required for the same power output and stops for water are fewer.

These are the reasons that make train dispatchers enthusiastic about locomotives equipped with Elesco feed water heaters.

Through the reclamation of a portion of the waste heat in exhaust steam—by pre-heating the feed water on its way to the boiler—Elesco feed water heaters add boiler capacity, and effect a sub-

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Railway Officers

EXECUTIVE

R. J. Cullen, first vice-president of the Atlanta & St. Andrews Bay, with headquarters at Panama City, Fla., has been elected president, succeeding **A. R. Graustein**, who has resigned. Mr. Graustein's headquarters were at New York.

Bismarck H. Taylor, vice-president (traffic) of the Denver & Rio Grande Western, with headquarters at Denver, Colo., will become affiliated with the Chicago, Burlington & Quincy on June 1, as assistant vice-president in the traffic department. His headquarters will be at Chicago.

OPERATING

W. B. Sharp, Jr., has been appointed trainmaster on the Rio Grande division of the Southern Pacific, with headquarters at Tucumcari, N. M., succeeding **H. G. McCarthy**, who has been transferred to El Paso, Tex., on the same division to replace **J. M. Trefren**, transferred.

Walter C. Owens, general superintendent of the Saskatchewan district of the Canadian National, with headquarters at Saskatoon, Sask., has been appointed also acting general superintendent of the British Columbia district in the absence of **B. T. Chappell**, general superintendent at Vancouver, B. C., who has been granted a leave of absence because of ill health.

P. R. Christopher, assistant trainmaster of the Cincinnati division of the Pennsylvania, has been appointed assistant trainmaster of the Baltimore division, succeeding **G. J. Holden**. **H. P. Lowry**, assistant trainmaster of the Williamsport division, has been appointed assistant trainmaster of the Cincinnati division. **W. J. Nodier** has been appointed assistant trainmaster of the Williamsport division.

TRAFFIC

Cornelius R. Rierdan has been appointed assistant general freight agent of the Chicago, St. Paul, Minneapolis & Omaha, with headquarters at St. Paul, Minn.

E. A. Compton, commercial agent for the Illinois Terminal System at Tulsa, Okla., has been promoted to the newly-created position of general agent at Dallas, Tex. **K. L. Stivers**, traveling freight agent at Chicago, has been appointed to the newly-created position of general agent at Minneapolis, Minn.

A. L. Talkington, division freight agent on the Chicago, Rock Island & Gulf, with headquarters at Fort Worth, Tex., has been promoted to assistant general freight agent, with the same headquarters, succeeding **George R. Angell**, who has been promoted to general freight

agent, as noted in the *Railway Age* of May 18.

C. S. Edmonds, assistant general freight agent of the Fort Worth & Denver City and the Wichita Valley, with headquarters at Fort Worth, Tex., has been appointed general freight agent, succeeding **L. M. Hogsett**, deceased. **Y. E. Juge** has been appointed assistant general freight agent at Fort Worth, succeeding Mr. Edmonds.

Edward J. Meade, assistant general passenger agent on the Illinois Central at St. Louis, Mo., who has been promoted to general passenger agent at Memphis, Tenn., as noted in the *Railway Age* of May 18, was born in 1896, at Chicago. Mr. Meade entered the service of the Illinois Central in July, 1916, as a station helper at East Dubuque, Ill. In the following year he was made a ticket seller at Dubuque, Iowa, and in 1921 he was advanced to traveling passenger agent, holding this position successively at Dubuque and Milwaukee, Wis. In 1931 Mr. Meade was further promoted to district passen-



Edward J. Meade

ger agent at Springfield, Ill., and in the following year he was advanced to assistant general passenger agent at St. Louis. He was holding the latter position at the time of his recent promotion to general passenger agent at Memphis.

C. E. Carlton, perishable traffic manager of the Missouri Pacific Lines, with headquarters at St. Louis, Mo., has been appointed to the newly-created position of assistant freight traffic manager at New York. He will have jurisdiction over the New York, Philadelphia and Boston agencies. **Merle W. Dancy**, traffic representative at Los Angeles, Cal., has been promoted to perishable traffic manager at St. Louis, to succeed Mr. Carlton.

Mr. Carlton first entered railway service in 1898 as a messenger boy for the Chicago, Burlington & Quincy at Galesburg, Ill., then serving successively in various capacities with the Atchison, Topeka & Santa Fe, the Texas & Pacific, the Houston Belt & Terminal, the Trinity & Brazos Valley and the Ft. Worth & Denver City, at various locations in Louisiana and Texas until 1906. In that year he entered the service of the Missouri Pacific Lines as a soliciting freight agent at Houston,

Tex., where he was appointed commercial agent in 1912. In 1916, Mr. Carlton went with the Gulf Coast Lines (now part of the Missouri Pacific Lines) as general agent at Chicago, later serving in the same



C. E. Carlton

capacity at New York. After a year with the United States Shipping Board as district traffic representative at Houston, Mr. Carlton returned to the Gulf Coast Lines in April, 1919, as district freight and passenger agent at Houston and New Orleans, La., being sent to New York as general eastern agent in March, 1920. In 1925, he was made assistant freight traffic manager at Houston, only to return to New York after a few months as general eastern agent. In 1927, Mr. Carlton was appointed assistant general freight agent of the Missouri Pacific Lines at St. Louis and in 1932 he was appointed perishable traffic manager, the position he was holding at the time of his recent appointment as assistant freight traffic manager at New York.

Tom W. Bowdry, division passenger agent on the Chicago, Rock Island & Gulf, at Fort Worth, Tex., whose appointment as general passenger agent, with the same headquarters, was noted in the *Railway*



Tom W. Bowdry

Age of May 18, was born on May 21, 1878, at Fort Worth. He entered railway service on July 18, 1895, as a messenger boy with the Rock Island. He has been with this company continuously ever since.
(Continued on page 840)

Annual Report

Minneapolis, St. Paul & Sault Ste. Marie Railway Co.

For the Fiscal Year Ended December 31, 1934

To the Stockholders:

Submitted herewith is a report for the fiscal year ended December 31, 1934.

The Gross Revenue, Operating Expenses, Fixed Charges, Net Income, etc., are shown in the following condensed statement:

	Year 1934	Year 1933
Gross Revenue	\$12,615,804.88	\$12,866,942.87
Operating Expenses	10,758,355.20	10,630,286.47
Net Revenue	\$1,857,449.68	\$2,236,656.40
Income from Other Sources	309,107.90	386,719.41
Total Income	\$2,166,557.58	\$2,623,375.81
Fixed Charges, Taxes, etc.	7,245,100.26	7,466,871.56
Net Deficit	\$5,078,542.68	\$4,843,495.75

Gross Revenue during 1934 was \$12,615,805.00, a decrease of \$251,138.00, or 1.95%, compared with the previous year.

Freight Revenue during 1934 was \$10,801,062.00, a decrease of \$258,210.00, or 2.33%.

The increases and decreases in Freight Revenue were as follows:

Products of Agriculture	\$772,180	Decrease
Products of Forests	134,373	Decrease
Less than Carload Freight	158,437	Decrease
Animals and Products	300,281	Increase
Products of Mines	15,727	Increase
Manufactures and Miscellaneous	490,772	Increase
Total Decrease	\$258,210	

Products of Agriculture. During the year, North Dakota, South Dakota, Northeastern Montana, and large areas along our lines in Minnesota and Wisconsin experienced the most serious drought in recent history, resulting in an almost complete failure of grain, feed, hay crops and pasture.

As a result of these conditions and the feeding to livestock of grain carried over from the previous year, there was a large decrease in shipments of grain from our territory. There was, however, an increase in the number of cars of all agricultural products handled caused by heavy outbound movements of distressed livestock, and inbound shipments of feed, including hay, straw, and other fodder. To prevent abandonment of farms and to retain foundation herds thereon, the railroads serving the territory transported this livestock and feed at greatly reduced rates. It is estimated that rate reductions thus granted by this Company amounted to approximately \$500,000.00 in 1934.

Shipments of grain to Minneapolis and Duluth markets from western territory tributary to our line, compared with corresponding shipments of the previous year, were as follows:

	1934 Bushels	1933 Bushels
Before August 1	6,790,170	10,707,000
After August 1	6,553,485	10,517,000
Total	13,343,655	21,224,000

The following table shows the grain crop harvested in each of the years shown and subsequently shipped to market over our line:

Year	Bushels	Year	Bushels
1915	83,527,877	1925	55,374,519
1916	34,233,059	1926	30,627,251
1917	28,560,411	1927	54,138,346
1918	52,002,485	1928	56,816,503
1919	30,393,424	1929	32,867,641
1920	41,232,301	1930	41,556,685
1921	36,832,469	1931	12,118,000
1922	59,429,961	1932	24,470,000
1923	34,657,645	1933	17,307,170
1924	66,280,641		

It is estimated the corresponding figure for 1934 will be approximately 8,000,000 bushels.

Products of Forests decreased as a result of the light demand for lumber and shingles caused by the continued low ebb of building construction. There was a decrease in the movement of pulpwood, but moderate increases in fuel-wood, posts, and poles.

Less Than Carload Freight. Increases in the first part of the year as a result of improved conditions were offset by the general falling off in business in the latter part of the year attributable largely to the effects of the drought on purchasing

power. Trucks and forwarding companies continue to make large inroads on this class of traffic. Final consideration is now being given to substantial reductions in merchandise rates, as well as the desirability of offering store-door pick-up and delivery service on a new basis.

Animals and Products increased as a result of the forced movement of livestock from farms due to the drought. The United States Government purchased thousands of head of stock for slaughter or transfer to other territories where pasture or feed was available, nearly all of which moved by rail on Government bills of lading at reduced rates. From North Dakota alone over 950,000 head were disposed of in this way. Efforts are being continued to combat trucks in the movement of livestock with apparently good results.

Products of Mines. Movement of sand, gravel, and crushed stone increased as a result of more highway construction. There was also an increase in crude petroleum, a large part of which was consigned to Canadian refineries. These increases were partially offset by decreases in iron ore from the Cuyuna Range.

Our movement of iron ore from the Cuyuna Range to Upper Lake Ports was 291,775 tons in 1934, compared with 405,882 tons in 1933. Total movements by all lines to all Upper Lake Ports was 22,003,380 tons in 1934 and 21,623,898 in 1933.

Manufactures and Miscellaneous. The increase was partly the result of improved business conditions in the first part of the year and reflects the relatively greater degree of improvement in the so-called consumption industries. This class of business was least affected by the general falling off in the latter part of the year. Trucks continue to handle a large amount of this traffic.

Passenger Revenue was \$682,495.00, an increase of \$60,532.00, or 9.7%. There was an increase in passenger business occasioned by reductions in the basic fares inaugurated in the previous year, and an increase in travel to and from the Pacific Coast.

Revenue from Milk and Cream handled in baggage cars was \$87,016.00, a decrease of \$21,836.00, or 20%, due to drought, increased use of trucks, and increased conversion into finished products near the source of supply.

Department of Agricultural Development. On account of the drought, farmers were compelled to sell a large share of their livestock to the United States Government Buying Agencies, reserving only a sufficient number for foundation herds. Feed for nearly all livestock in the area affected by the drought had to be purchased or furnished by Governmental Agencies. This department was called upon to do considerable educational work among the farmers in this area with regard to the proper feeding of livestock, and assisting in the Government cattle buying program.

During the year a very effective grasshopper eradication campaign was carried out in North Dakota, South Dakota, Montana, and Minnesota with funds made available by federal and local authorities, in which campaign we assisted. Surveys indicate that infestation in 1935 will be considerably less than in 1934, although conditions in several counties in North Dakota are still quite serious. It is thought this plague is well under control.

Experimental work on corn, potatoes, and livestock, as well as activities with boys' and girls' clubs, were continued on a curtailed basis.

Educational efforts were also carried on with Farmers' Livestock Shipping Associations to promote shipping of livestock by rail instead of by truck.

Bus and Truck Competition has become more severe, especially as to trucks. Drastic reductions in rates have been necessary in numerous instances to hold traffic to the railroads. Efforts to secure federal regulation of interstate truck operators were unsuccessful in 1934, due partly to the pressure of other legislation before Congress. Mr. Joseph B. Eastman, Federal Coordinator of Transportation, has recently submitted to Congress specific recommendations for the comprehensive regulation of all forms of transportation, which, if enacted into law and enforced, will be helpful.

Operating Expenses:

	1934	1933	Increase or Decrease	Per Cent
Gross Operating Revenue	\$12,615,805	\$12,866,943	(251,138)	1.95
EXPENSES:				
Maintenance of Way and Structures	1,819,384	1,920,157	(100,773)	5.25
Maintenance of Equipment	2,496,237	2,550,259	(54,022)	2.12

[Advertisement]

GENERAL BALANCE SHEET DECEMBER 31, 1934

ASSETS		LIABILITIES	
Property Investment:		Capital Stock:	
Road	\$104,004,135.47	Common	\$ 25,206,800.00
Equipment	29,411,040.82	Preferred	12,603,400.00
	<u>\$133,415,176.29</u>	Total	\$ 37,810,200.00
Less Reserve for Equipment Depreciation	14,546,581.28	Governmental Grants:	
Total	\$118,868,595.01	Grants in Aid of Construction	3,224.89
Sinking Fund	2,346.68	Funded Debt Unmatured	92,641,800.00
Deposits in lieu of Mortgaged Prop. Sold	4,884.94	M. St. P. & S. S. M. Ry. Co. 4% Leased	
Miscellaneous Physical Property	840,202.45	Line Certificates	11,256,400.00
Wis. Cent. Ry. Co., Preferred Stock	11,256,400.00	(Issued in exchange for Preferred	
(Pledged for M. St. P. & S. S. M. Ry. Co.,		Stock of Wis. Central Ry. Co., held	
4% Leased Line Certificates)		by Trustee.)	
Investments in Proprietary, Affiliated, and		Non-negotiable Debt to Affiliated Com-	
Controlled Companies:		panies	13,685,112.71
Stocks	\$ 12,008,382.47	(Includes \$11,912,897.42 payable in	
Bonds	8,007,852.20	Canadian Funds stated at	
W. C. Ry. Co. Advances	621,752.49	\$11,972,461.91)	
Other Advances	2,630,871.77	Current Liabilities:	
Total	23,268,858.93	Loans and Bills Payable	\$ 13,759,832.89
Other Investments:		Traffic and Car Service Balances	350,509.46
Stocks	\$ 1.00	Audited Vouchers and Wages Payable	2,116,440.58
Bonds	1,826,200.00	Miscellaneous Accounts Payable	313,484.86
Notes	182,014.56	Interest Matured Unpaid	1,997,804.14
Real Estate Sales Contracts	43,200.58	Interest Matured Unpaid (Leased Line	
Total	2,051,416.14	Certificates)	*900,512.00
Current Assets:		Unmatured Interest Accrued	389,815.12
Cash	\$ 551,699.74	Unmatured Rents Accrued	13,238.43
Special Deposits — Special Wisconsin		Receiver of W. C. Ry. Co.	1,528,473.09
Central Fiduciary Account	1,406,326.97	Other Current Liabilities	154,608.12
Other Special Deposits	129,701.40	Total	21,524,718.69
Loans and Bills Receivable	515.35	Deferred Liabilities:	
Traffic and Car Service Balances	162,743.55	Equipment Purchase Contracts	\$ 806,098.56
Agents and Conductors Balances	409,348.27	Other Deferred Liabilities	38,671.14
Miscellaneous Accounts Receivable	417,164.55	Total	844,769.70
Material and Supplies	1,911,799.17	Unadjusted Credits:	
Interest and Dividends Receivable	1,825.09	Tax Liability	\$ 808,817.47
Other Current Assets	17,364.22	Premium on Funded Debt	767.99
Total	5,008,488.31	Other Unadjusted Credits	599,441.17
Deferred Assets:		Total	1,409,026.63
Working Fund Advances	\$ 20,865.46	Corporate Surplus:	
Other Deferred Assets	388,908.02	Additions to Property thru Income	
W. C. Ry. Co. Advances Prior to Re-		and Surplus	\$ 241,264.38
ceivership	7,017,600.60	Profit and Loss, Debit Balance	7,449,339.14
Total	7,427,374.08	Deficit	7,208,074.76
Unadjusted Debits:		Grand Total	<u>\$171,967,177.86</u>
Rents and Insurance Paid in Advance ..	\$ 26,928.38		
Discount on Funded Debt	697,056.21		
Discount on Canadian Funds	784,882.10		
(To be extinguished as loans are repaid)			
Other Unadjusted Debits	1,729,744.63		
Total	3,238,611.32		
Grand Total	<u>\$171,967,177.86</u>		

OPERATING EXPENSES—Continued

	1934	1933	Increase or Decrease	Per Cent
Traffic	407,541	437,121	(29,580)	6.77
Transportation	5,202,296	4,965,401	236,895	4.77
Miscellaneous	47,263	35,060	12,203	34.81
General	796,012	734,745	61,267	8.34
Transportation for Investment—				
Credit	(10,378)	(12,456)	2,078	...
Total Operating Expenses	10,758,355	10,630,287	128,068	1.20
Operating Ratio	85.28	82.62	2.66	...
Net Revenue From Railway				
Operation	1,857,450	2,236,656	(379,206)	16.95
(Parentheses indicate red figures or decreases)				

There was a decrease of 8,000,000 bushels of grain moved from crop producing territory into terminals. This amount of business could have been moved in regular train service with but very little additional expense.

On July 1, 1934, one-fourth of the 10% wage reduction, made on February 1, 1932, was restored, increasing the payroll \$79,435.00. There were increases in prices of all material.

Maintenance of Way and Structures Expenses decreased \$100,773.00 or 5.25%.

Increases: \$12,609.00, restoration of wage reductions.

Decreases: \$27,800.00, less ties required, reflecting the benefits of treated tie program.

\$49,500.00, inventory adjustment on rail.

\$20,700.00, removing snow and ice.

Balance: Numerous other small savings made in supervision and labor.

Maintenance of Equipment Expenses decreased \$54,022.00, or 2.12%.

Increases: \$13,151.00, restoration of wage reductions.

\$84,300.00, repairs to locomotives. Program was increased during the first part of the year in anticipation of continued gradual increase in business.

* Unpaid installments liability for which is in dispute.

Decreases: \$90,100.00, depreciation, due to old equipment retired and lowering of depreciation rates on instructions from the Interstate Commerce Commission.

\$61,200.00, repair to cars. Only such equipment was repaired as was necessary to handle the business offered.

Transportation Expenses increased \$236,895.00, or 4.77%. While gross revenue decreased 1.95%, gross ton miles, representing the transportation effort required, increased 5.85%.

Increases: \$45,833.00, restoration of wage reductions.

\$99,000.00, increased cost of coal.

General Expenses increased \$61,267.00, or 8.34%. The Railroad Retirement Act, effective August 1, 1934, required the railroads to make payments to the United States Treasury to provide pensions for retired employees. The railroads' contention that the Act is unconstitutional is now pending before the United States Supreme Court. Since August 1, 1934, this Company has included in its General Expenses the payments which it will be required to turn over to the United States Treasury if the Act is held constitutional. This resulted in an increase of \$107,715.00 in General Expenses, which was partially offset by further reductions in salaries of officers and certain supervisory employees and various economies amounting to \$46,448.00.

Taxes decreased \$196,068.00 due to reductions in assessments secured in the various states.

Hire of Equipment, representing amounts paid to and received from other companies, resulted in an income of \$39,665.00, compared to a charge of \$35,819.00 in the previous year. This was due to a decreased use of foreign cars and certain adjustments in accounting for rental of cars leased to the Wisconsin Central Railway.

Property Investment. The investment in road account shows a net decrease of \$6,866.07 for the year, resulting from retirements and accounting adjustments totaling \$217,588.57, which were substantially offset by expenditures for additions and betterments amounting to \$210,722.50.

The equipment investment account was likewise decreased

during the year by a net amount of \$2,407,896.87, brought about through retirements and accounting adjustments totaling \$2,447,890.45, partially offset by expenditures for additions and betterments amounting to \$39,993.58. The retirements include 6 locomotives, 1,689 freight train cars, 24 passenger train cars, and 69 work equipment units—practically all of which are covered by a special equipment retirement program under which the Interstate Commerce Commission authorized charging the retirement loss to Profit and Loss instead of to Operating Expenses.

The consolidation of June 11, 1888, that formed the present Soo Line included The Aberdeen, Bismarck and Northwestern Railway Company, which, at the date of the consolidation, owned about 113 miles of graded roadbed and certain right-of-way running from Aberdeen, South Dakota, through Ashley and Wishek, North Dakota, to Bismarck, North Dakota. That part of the right-of-way between Aberdeen, South Dakota, and Ashley, North Dakota, was never used and parts of it had been sold from time to time. Title to the remainder had been lost through adverse possession and reversionary rights in the deeds. Its cost, which was represented by the amount of \$2,149,507.32 carried in Miscellaneous Physical Property, was, therefore, written off to Profit and Loss during the year, under instructions of the Interstate Commerce Commission.

Funded and Unfunded Debt. The outstanding indebtedness was decreased by various payments during the year aggregating \$1,614,964.91, as follows:

Decreases:

First Refunding Mortgage Bonds, Series "A".....	\$21,000.00
Twenty-five year Gold Notes.....	71,000.00
Equipment Trust Notes.....	505,000.00
Equipment Purchase Contracts.....	215,420.61

[Advertisement]

Short Term Loans from Reconstruction Finance Corporation	71,464.95
Short Term Loans from The Railroad Credit Corporation	731,079.35

Total Decrease \$1,614,964.91

Non-negotiable Debt to Affiliated Companies increased \$5,790,273.09.

Because of the 1934 crop failure, the Company was without funds to pay the \$5,000,000 of its Two Year Six Per Cent Secured Notes which matured on August 1, 1934. Being advised of the situation, the holders of \$4,923,500 of the Notes have granted the Company extensions to August 1, 1936. A similar extension to that date was obtained from Reconstruction Finance Corporation on its \$5,000,000 loan to the Company which matured on August 1, 1934.

The Wisconsin Central properties are still in receivership; the Soo Line is still operating them as agent for the Receiver; the Court's decision that the Soo Line was entitled to terminate its lease of those properties still stands; and the controversy as to whether the lease was actually terminated is still pending.

Conditions as to moisture are much better this year. Minnesota and about the eastern third of North Dakota have an ample supply for a considerable period. The western two-thirds of North Dakota and the eastern part of Montana have a sufficient amount of moisture in the ground to allow for seeding and germination, but conditions must be very favorable the rest of the crop year if that section is to produce anything like a normal crop.

So far as it has been possible we have maintained our property in a condition to handle increased business, for which situation great credit must be given to our organization for the work it has done.

C. T. JAFFRAY,
President.

News (Railway Officers)

(Continued from page 837)

holding various positions at Fort Worth and Dallas, Tex. After being advanced through various positions in the auditor's office at Fort Worth, including that of chief clerk of ticket accounts, Mr. Bowdry was transferred to the passenger traffic department as chief rate clerk. Subsequently he was made chief clerk in this department and then division passenger agent. His appointment as general passenger agent at Fort Worth was effective on May 15.

OBITUARY

Andrew McCowan, assistant general superintendent of car equipment of the Western region of the Canadian National, with headquarters at Winnipeg, Man., died on April 30, following an operation.

B. D. Bristol, retired assistant controller on the Illinois Central, died on May 7 at Chicago. Mr. Bristol was born in November 11, 1873, at Green Springs, Ohio, and entered the service of the Illinois Central in the freight claim department at Chicago in July, 1904, being advanced to freight claim agent in July, 1912. He was appointed assistant controller in March, 1920, and retired in 1932.

Adelphus C. Terrell, valuation engineer of the Northern Pacific, with headquarters at St. Paul, Minn., died on May 10, following a three months illness. Mr. Terrell had been connected with the Northern Pacific for 29 years. He was born in 1876 at Macon, Mo., and received his technical education at Cornell University, Ithaca, N. Y., from which he graduated in 1900. He entered railway service in the same year as a rodman on the Chicago, Burlington & Quincy, later serving as an instrumentman. In September, 1901,

Mr. Terrell went with the St. Louis-San Francisco as a resident engineer, and three years later he entered the service of the Chicago, Rock Island & Pacific, serving as a division engineer and resident engineer until 1906, when he entered the service of the Northern Pacific as a resident engineer. On this road Mr. Terrell held the positions of assistant engineer of maintenance, division engineer of maintenance and assistant engineer on various construction projects until 1916, when he was appointed division engineer in the valuation department. In August, 1928, he was further promoted to valuation engineer, which position he continued to hold until his death.

Robert E. Malone, superintendent of terminals for the Kansas City Southern at Kansas City, Mo., died on May 15 following a heart attack. Mr. Malone was born on February 6, 1885, at Ladue, Mo., and entered the service of the Kansas City Southern as a switchman at Kansas City on July 2, 1917. He was promoted to general yardmaster on January 28, 1930, and was further advanced to superintendent of terminals at Kansas City on January 10, 1934.

Alexander M. Calhoun, vice-president and secretary of the Kansas City Southern and of the Texarkana & Ft. Smith, with headquarters at Kansas City, Mo., died on May 16. Mr. Calhoun was born on May 1, 1871, at Nebraska City, Neb., and first entered railway service in 1890, as a clerk in the superintendent's office of the Missouri Pacific at Atchison, Kan. Five years later he went with the St. Louis Southwestern as clerk to the claim agent at Pine Bluff, Ark., being appointed claim agent of this road, with headquarters at Tyler, Tex., in the following year. In 1899, Mr. Calhoun entered the service of the Kansas City Southern as chief clerk to the superintendent at Pittsburg, Kan., being promoted to claim agent at

Texarkana, Tex., later in the same year. In 1903 he went with the Denver & Rio Grande Western, serving as chief clerk to the general storekeeper and clerk in the office of the general manager at Den-



Alexander M. Calhoun

ver, Colo., until 1905. In that year Mr. Calhoun served for a short time as chief clerk to the general manager of the Cincinnati, Hamilton & Dayton (now part of the Baltimore & Ohio), at Cincinnati, Ohio. Later in 1905 he returned to the Kansas City Southern as chief clerk to the president at Kansas City, being advanced to assistant to the president in 1910. During federal control of the railroads Mr. Calhoun served as assistant to the federal manager of a group of southwestern railroads, which included the Kansas City Southern. On the return of the railroads to private control in 1920, he was again appointed assistant to the president of the Kansas City Southern. In 1924 Mr. Calhoun was elected also vice-president and subsequently his title was changed to vice-president and secretary.

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